HP Management Packs for Microsoft® Operations Manager 2005 User Guide

November 2004 (First Edition)
Part Number 379017-001

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About This Guide

This guide is designed for system administrators who use the HP Management Packs for Microsoft® Operations Manager (MOM) 2005, Insight Management Agents, and other HP applications and tools to manage the operations of HP ProLiant and Integrity servers within a MOM environment.

Audience Assumptions

Readers of this guide should be familiar with the configuration and operation of Microsoft Windows®, Microsoft Operations Manager 2005, and the HP Insight Management Agents. Because of the potential risk of data loss, only individuals who are experienced with using this software should implement the procedures described in this guide.

Where to Go for Additional Help

In addition to this guide, the following information sources are available:

- Web pages related to the HP Management Packs for MOM at http://www.hp.com/servers/integration
- MOM 2005 user documentation at http://www.microsoft.com/mom/techinfo/productdoc/default.mspx

Telephone Numbers

For the name of the nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.

For HP technical support:

- In the United States and Canada, call 1-800-HP-INVENT (1-800-474-6836).
- Outside the United States and Canada, refer to http://www.hp.com.

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Product Overview

HP delivers new management packs that complement and extend Microsoft Operations Manager (MOM) 2005, integrating alert processing, state monitoring, and hardware resource lifecycle management for HP ProLiant and Integrity servers.

Designed specifically for MOM 2005, the HP ProLiant Management Pack for MOM 2005 and the HP Integrity Management Pack for MOM 2005 provide predefined policies, event processing rules, and tasks, which enables administrators to proactively streamline IT operations and ensure increased systems availability by monitoring Microsoft Windows environments and HP server hardware platforms through a common MOM console.

The HP Management Packs for MOM 2005 automatically discover and group HP ProLiant and Integrity servers by hardware platform type. Default policies highlight the state of HP hardware and management software components, and present a comprehensive collection of server attributes that provides a consolidated view of system status and configuration data. Predefined event processing rules build on the functionality of the HP Insight Management Agents to display Windows Event Log entries for HP server hardware as alerts in the MOM 2005 Operator Console, including real-time and pre-failure event definitions.

For advanced hardware lifecycle management and remote administration of HP ProLiant and Integrity servers, the HP Management Packs for MOM 2005 include tasks that launch HP Systems Insight Manager (SIM) for group systems administration, the HP System Management Homepage for single system health and configuration monitoring, and advanced remote server administration through the HP Lights-Out Management Processor.

In this guide, the HP ProLiant Management Pack for MOM 2005 and the HP Integrity Management Pack for MOM 2005 are referred to collectively as “HP Management Packs for ProLiant and Integrity servers” where functionality overlaps.

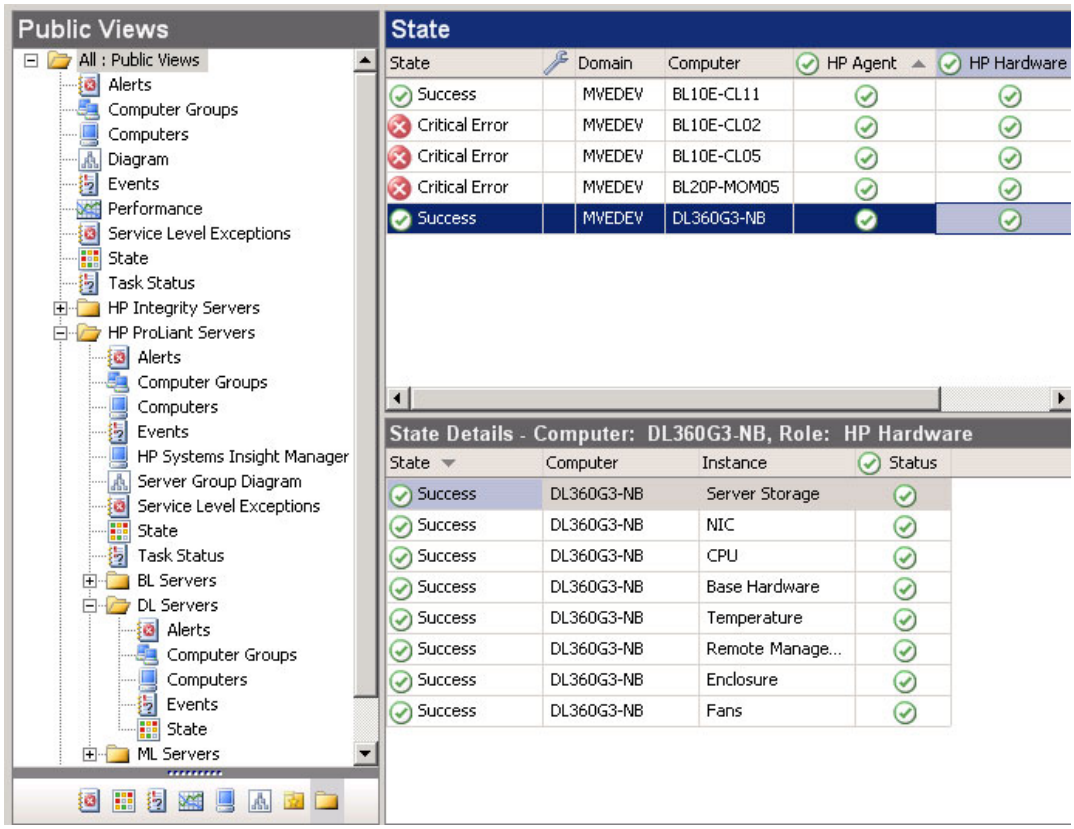


Figure 1-1: MOM 2005 Operator Console

Benefits at a Glance

HP Management Packs for ProLiant and Integrity servers:

- Complement and extend MOM 2005 with hardware resource management for HP ProLiant and Integrity servers
- Enable simplified and proactive monitoring of the Microsoft Windows and HP hardware resources using a common MOM 2005 console
- Streamline IT administration and increase systems availability

Features

The HP Management Packs for ProLiant and Integrity servers include the following main features:

- Fully scripted installation that creates HP specific groups and copies HP rules, scripts, views, tasks, and knowledge base data to the MOM 2005 database
- Automatic discovery and grouping of HP ProLiant and Integrity servers by server family and platform type
- State monitoring for HP hardware subsystems and management software components

- Predefined rules to process and clearly display Windows Event Log entries for HP server hardware alerts in the MOM 2005 Operator Console
- Policies to clearly present consolidated views of key HP server attributes for rapid system analysis, which include CPU type, total memory, available hard drive storage, firmware revisions, and the version of installed Insight Management Agents
- HP servers clearly represented in the MOM Diagram View
- Tasks to launch HP SIM and the HP System Management Homepage and provide server associations for HP Lights-Out Management Processors from the MOM Operator Console
- Access to HP BladeSystem and other HP ProLiant Essentials value-added software for hardware performance management, vulnerability assessment, and advanced lifecycle administration of blade servers and virtual systems through HP SIM

System Requirements

The following sections describe the system requirements necessary to install and operate the HP Management Packs for ProLiant and Integrity servers.

Insight Management Agent Requirements

HP Insight Management Agents must be installed on each HP server to be managed. The HP Management Packs for ProLiant and Integrity servers support event notifications generated by the following Insight Management Agents:

- HP Insight Management Agents for ProLiant servers versions 5.50 to 7.10
- HP Insight Management Agents for Integrity servers versions 2.3 to 3.0

Management Protocol Requirements

The required management protocols include:

- Simple Network Management Protocol (SNMP)—Required locally on each managed HP server to enable correct operations of the HP Insight Management Agents and to populate MOM 2005 with hardware state information
- Hyper Text Transfer Protocol (HTTP)—Required to enable tasks in MOM 2005 that access HP SIM, the HP System Management Homepage on individual managed systems, and HP Management Processors

MOM Platform Support

MOM 2005

The HP Management Packs for ProLiant and Integrity servers are qualified for installation and operations with MOM 2005.

NOTE: HP strongly discourages the use of the HP Insight Management Pack (IMP) for MOM 2000 in a MOM 2005 environment. The new HP Management Packs for ProLiant and Integrity servers have been specifically developed to take advantage of the redesigned architecture and new features provided with MOM 2005. Installing the HP IMP for MOM 2000 in a MOM 2005 environment might lead to duplicate event entries and groups, plus several inoperative features that might be difficult to remove from a MOM 2005 database.

MOM 2000

In line with Microsoft's position on MOM 2000 support, the HP Management Packs for ProLiant and Integrity servers are not supported under MOM 2000. MOM 2005 management packs use a new health model with enhanced capabilities. Consequently, Microsoft does not provide support for MOM 2005 management packs in a MOM 2000 environment.

System Support

The following sections describe the system hardware and platforms supported by the HP Management Packs for ProLiant and Integrity servers.

HP Hardware Support

The HP Management Packs for ProLiant and Integrity servers discover and monitor the following HP hardware platforms running HP Insight Management Agents:

- HP ProLiant servers
  - HP ProLiant DL 300 series
  - HP ProLiant DL 500 series
  - HP ProLiant DL 700 series
  - HP ProLiant ML and BL series servers
- HP Integrity servers
  - HP Integrity Superdome series servers
  - HP Integrity rx1620 servers
  - HP Integrity rx2620 servers
  - HP Integrity rx2600 servers
  - HP Integrity rx4640 servers
  - HP Integrity rx5670 servers

— HP Integrity rx7620 servers

— HP Integrity rx8620 servers

Operating Systems

The HP Management Packs for MOM 2005 support the discovery and monitoring for HP ProLiant and Integrity servers running the following operating systems:

- Windows Server 2003
- Windows 2000 with Service Pack 2 or later
- Windows 2000 Server
- Windows 2000 Advanced Server
- Windows 2000 Datacenter Server
- Microsoft Windows NT® 4.0 Server with Service Pack 6a

Product Architecture Overview

The following section provides an architectural and functional overview of the HP Management Packs for ProLiant and Integrity Servers.

The HP Management Packs for ProLiant and Integrity servers are designed to:

- Automatically identify, group, and display HP ProLiant and Integrity servers within the MOM 2005 Operator Console
- Populate MOM with server attribute and configuration data for HP hardware and software components
- Monitor and display the state of HP server hardware and the associated management services
- Proactively identify, translate, and display HP hardware events written to the Windows Event Log as MOM alerts
- Provide browser-based links to HP management tools for hardware resource management and advanced remote administration from within MOM 2005

HP Management Pack Installation

Figure 1-2 identifies the main elements of MOM 2005 and the components installed by the HP Management Packs for ProLiant and Integrity servers.

All elements of the HP management packs are copied to the MOM database. These elements include:

- Computer Groups
- Computer Attributes

- Providers
- Rules
- Scripts
- Tasks
- Views

If an HP ProLiant or Integrity server is running HP Insight Management Agents, the discovery rules provided with the HP Management Packs will assign the server to the appropriate HP group within MOM 2005.

After the server is properly discovered, the relevant HP providers, event processing rules, state processing rules, and scripts are also copied to the server if the server is classified as "Managed" under MOM 2005. Managed servers have a local MOM Agent and Insight Management Agents installed. Each managed server uses these rules and scripts to perform local event management and filtering before escalation to the MOM Operator Console.

This process does not take place for "Agentless" servers under MOM 2005. Agentless servers do not have a local MOM agent installed, and the level of available management data is reduced.

NOTE: Refer to Chapter 2, "Installation and Configuration," for information on the components and functionality provided by the HP Management Packs for ProLiant and Integrity servers.

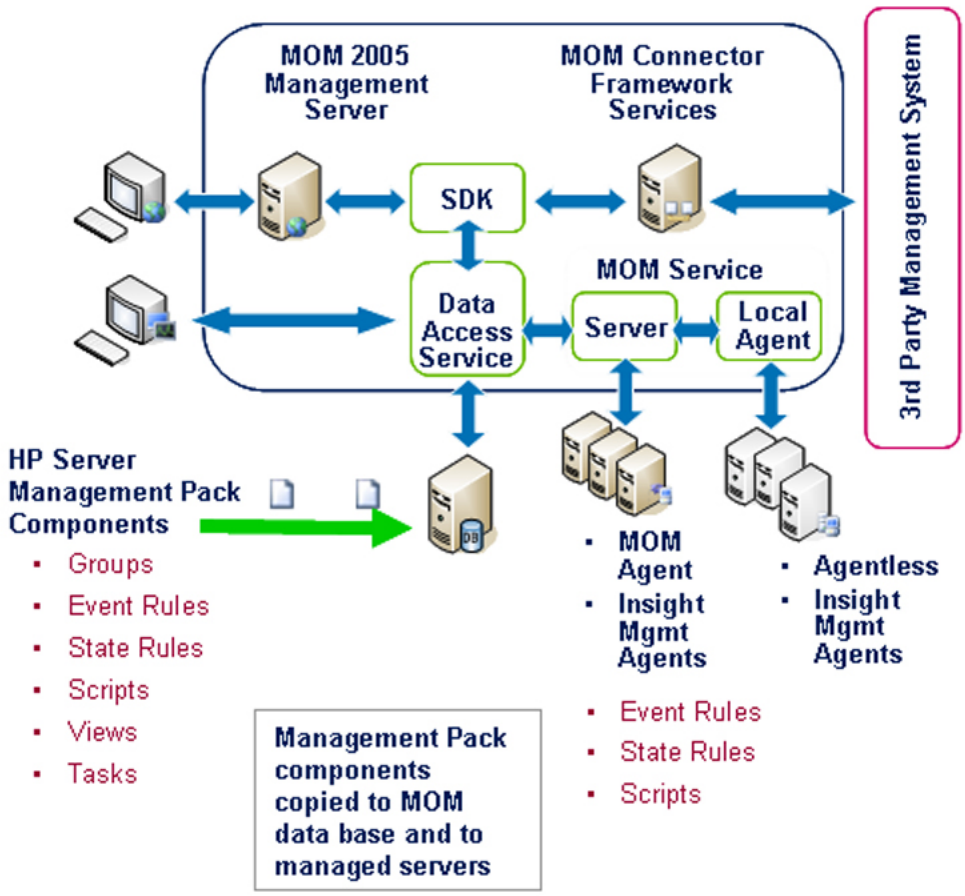


Figure 1-2: Architecture and management installation

HP Management Pack Operations

Figure 1-3 identifies some of the major elements of the HP Management Packs for ProLiant and Integrity servers and the underlying elements used to collect data and process hardware events and state changes.

- The HP server discovery rules and scripts use Insight Management Agents, system BIOS data, and information from WMI to identify HP ProLiant and Integrity servers and collate individual system configuration attributes.
- HP state monitoring rules use data from Insight Management Agents MIBs to monitor the condition of HP ProLiant and Integrity server hardware, and to populate the State views in the MOM 2005 Operator Console. HP state monitoring rules also monitor the availability of key HP management software and services, such as Insight Management Agents, Version Control Agents, and Insight Diagnostics.
- The HP event processing rules rely on Insight Management Agents and data written to the Windows Event Log to identify and process HP hardware events.

When an HP Insight Management Agent generates an event, a corresponding entry is written to the Windows Event log, which is the primary event data source used by MOM 2005. If the HP event in the Windows Event Log has an associated event processing rule defined by an HP Management Pack, a MOM alert is generated and written to the appropriate view in the MOM Operator Console.

HP alerts in MOM include clear event details and knowledge base data designed to enable rapid analysis of real-time and pre-failure conditions. Certain hardware events reported to the Windows Event Log can also generate additional events indicating a change in hardware state.

NOTE: Refer to Chapter 3, "Using the HP Management Packs," for information on the components provided with the HP Management Packs for ProLiant and Integrity servers.

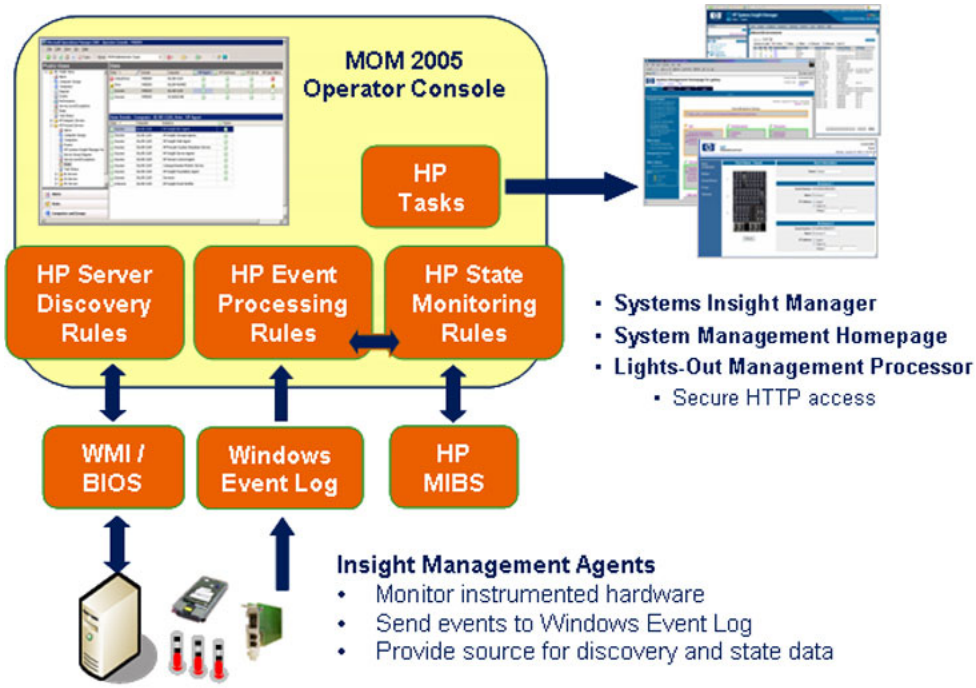


Figure 1-3: Architecture and management installation

2

Installation and Configuration

This chapter provides detailed instructions for installing and configuring the HP ProLiant Management Pack for MOM 2005 and the HP Integrity Management Pack for MOM 2005.

NOTE: Before beginning the installation, carefully review the information in this chapter and in the "System Requirements" section in Chapter 1.

Installation Overview

To install the HP Management Packs for ProLiant and Integrity servers:

1. Select the appropriate HP Management Pack to install.
2. Download the appropriate HP Management Pack for MOM 2005 from the HP website at http://www.hp.com/servers/integration.
3. Install the HP Management Pack into the MOM 2005 environment.
4. Complete the post-installation steps to discover and display HP servers in MOM 2005.

Pre-Installation Considerations

Before installing the HP Management Packs for ProLiant and Integrity servers, be sure to read and understand the installation information provided in this chapter. The following requirements must be met before installing this product:

- If the HP Insight Management Pack (IMP) for MOM 2000 was installed on the MOM 2005 Management Server, the HP IMP must be removed before installing the HP ProLiant Management Pack for MOM 2005.

  NOTE: Refer to the "Uninstalling the HP Insight Management Pack for MOM 2000" section for removal instructions.

- The HP Management Packs for ProLiant and Integrity servers are separate import modules. Be sure to install only the management packs required to managed the target systems environment. MOM does not currently allow for the easy removal of installed management packs.
- Installation of the HP Management Packs for ProLiant and Integrity servers uses the standard "Import Management Pack" option provided in the MOM 2005 Administrator Console.

- The HP Management Packs for ProLiant and Integrity servers must be installed on a system hosting the MOM Management Server.
- SNMP services must be active on all HP ProLiant and Integrity servers to be managed before installing the HP Insight Management Agents. SNMP is required locally on each managed HP system for correct installation and operation of the Insight Management Agents.
- HP Insight Management Agents versions 5.50 to 7.10 must be installed and active on all HP ProLiant servers to be managed using MOM 2005 and the HP ProLiant Management Pack.
- HP Insight Management Agents versions 2.3 to 3.0 must be installed and active on all HP Integrity servers to be managed using MOM 2005 and the HP Integrity Management Pack.

Installing the HP Management Packs for ProLiant and Integrity Servers

The following section describes the recommended steps for installing the HP Management Packs for ProLiant and Integrity servers in a MOM 2005 environment. The HP Management Packs are provided in .ZIP file format and can be downloaded from http://www.hp.com/servers/integration.

1. Download the appropriate management pack file from http://www.hp.com/servers/integration:
   - — hpProLiantMP01_0.ZIP—HP Management Pack for ProLiant servers
   - — hpIntegrityMP01_0.ZIP—HP Management Pack for Integrity servers
2. Copy the downloaded file to a directory on a system hosting the MOM Management Server.
3. Expand the .ZIP file using a suitable utility to extract the following files:
   - — hpProLiantMP01_0.AKM—HP ProLiant Management Pack for ProLiant servers import file
   - — hpIntegrityMP01_0.AKM—HP Integrity Management Pack for Integrity servers import file

Importing the HP Management Packs for ProLiant and Integrity Servers

Import the appropriate HP Management Pack using the MOM Administrator console.

1. In the Navigation pane, click **Management Packs.**
2. In the Detail pane, click **Import/Export Management Packs** to open the Management Pack Import/Export Wizard.
3. Follow the instructions in the Management Pack Import/Export Wizard, and click **Next** to start the import operation.

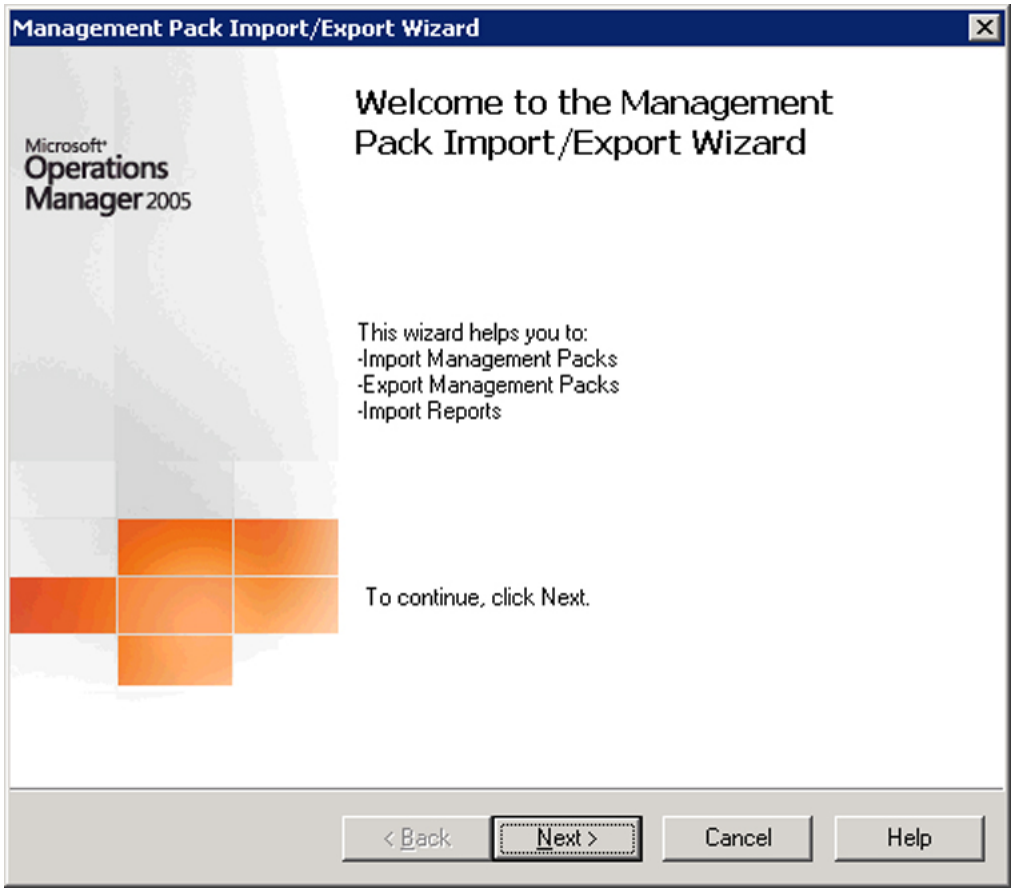


Figure 2-1: Welcome to the Management Pack Import/Export Wizard

4. Select **Import Management Packs and/or reports.**

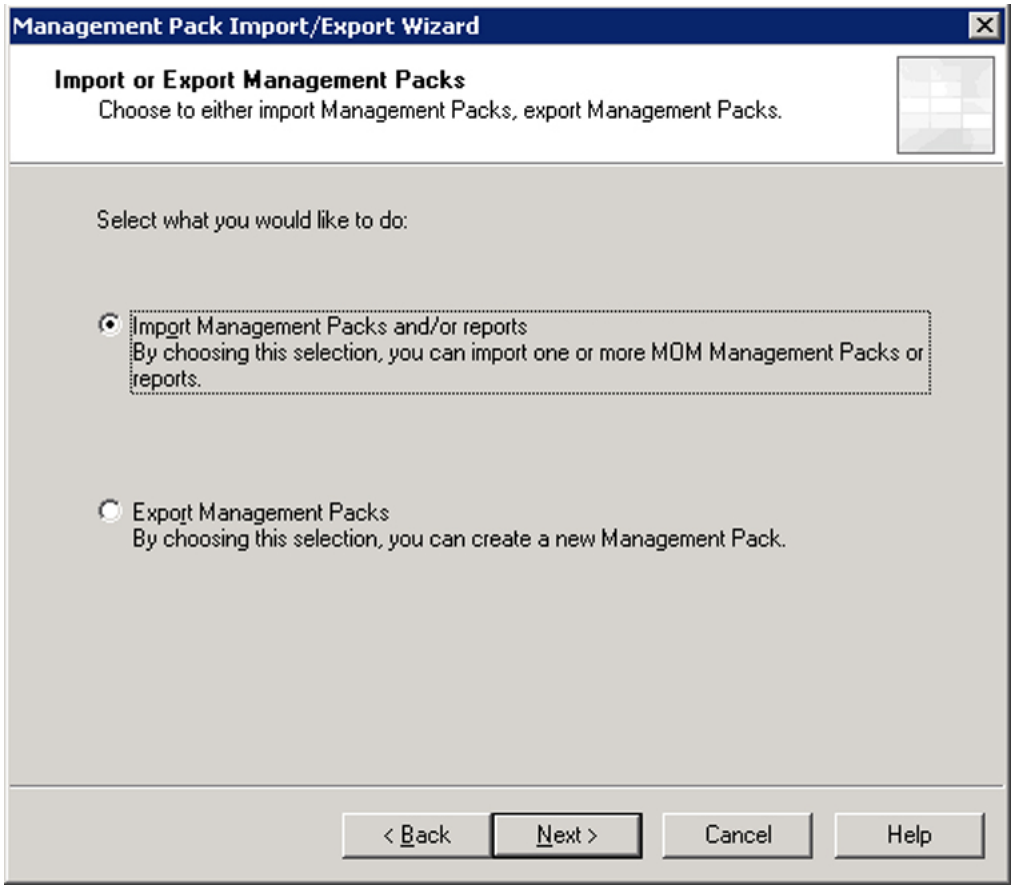


Figure 2-2: Import or Export Management Packs

5. Select the location to save the file, and then select **Import Management Packs only.**

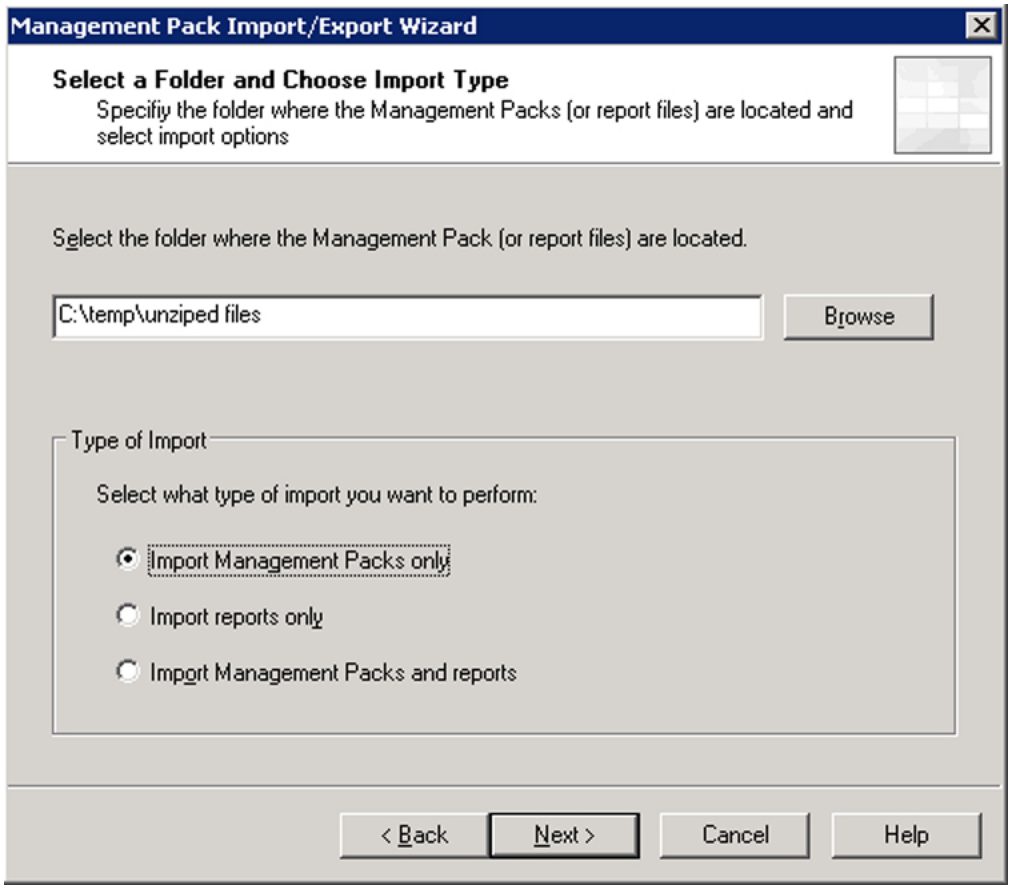


Figure 2-3: Select a Folder and Choose Import Type

6. Click **Next** to launch the Selection screen.

7. Select each Management Pack to import, and then choose from the following options:
   - **Update existing Management Pack**—This selection is the default. Custom rules, enabled or disabled settings, and company knowledge will be retained. Select to update information that has changed in the existing Management Pack.
   - **Replace existing Management Pack**—Select this option to replace the existing management pack.
   - **Backup existing Management Pack**—This check box is selected by default. Existing management packs are backed up so they can be restored if necessary. HP recommends selecting this option. The default directory is **\Program Files\Microsoft Operations Manager 2005\MPBackup**. To select a different backup directory, click **Browse.**

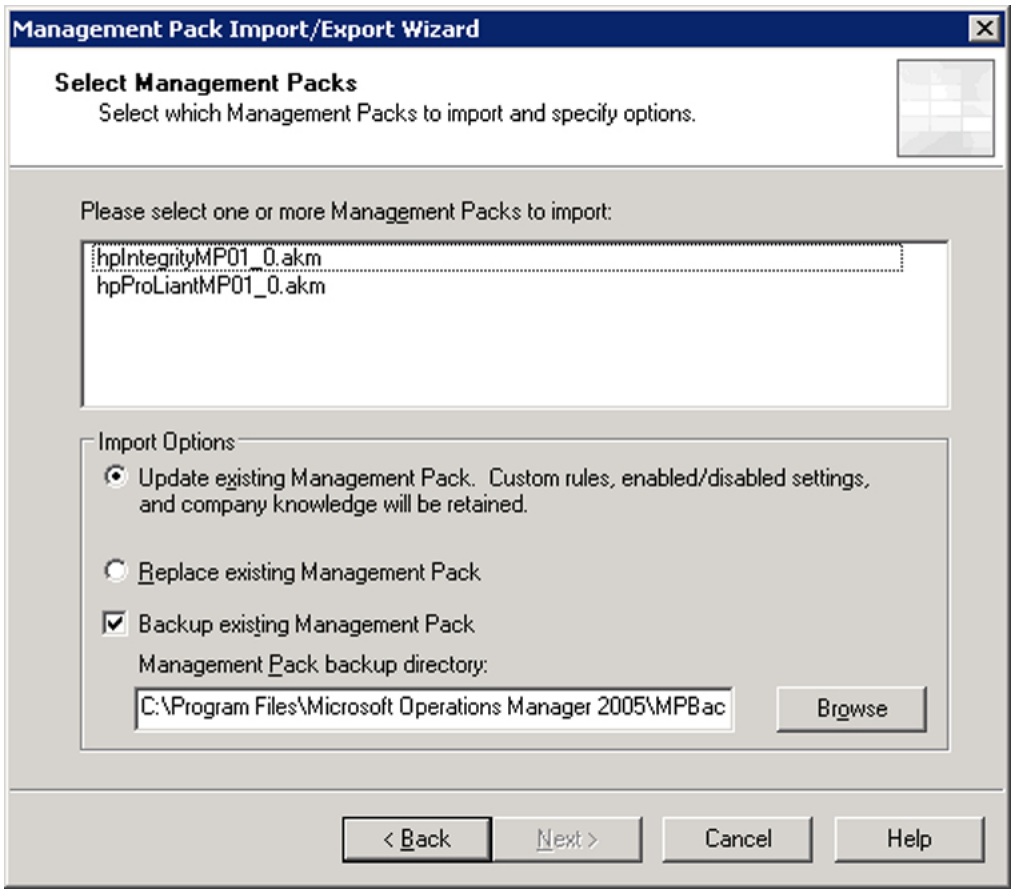


Figure 2-4: Select Management Packs

8. Review the selections, and click **Finish** to start the import operation.

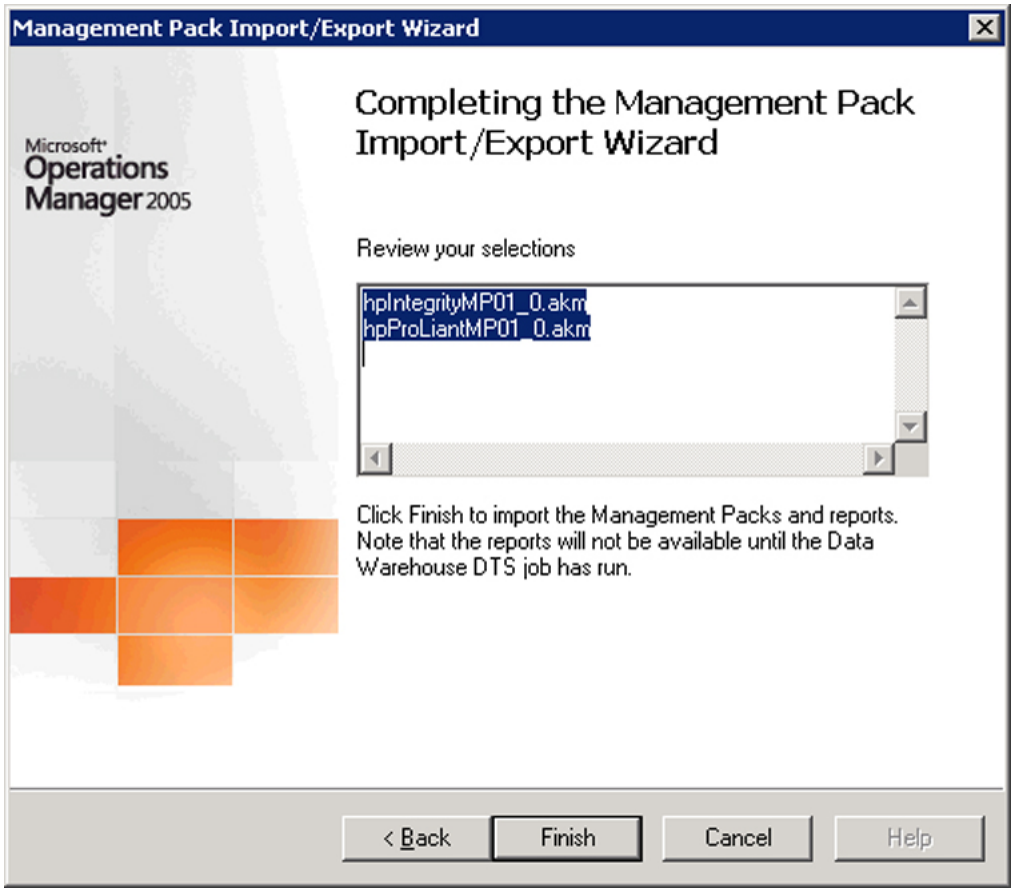


Figure 2-5: Completing the Management Pack Import/Export Wizard

9. Right-click the **Management Packs** folder on the MOM Administrator console, and select **Commit Configuration Change.**

IMPORTANT: If step 9 is not completed after the management pack installation is complete, management pack rules are sent at the next Agent Request configuration interval. The default interval cycle is 5 minutes.

NOTE: If the imported management pack appears to function incorrectly, verify that the MOM Agent Action Account has enough privileges.

A successful installation adds the following HP-specific elements into the existing MOM 2005 environment:

- Computer groups
- Processing rules
- Public views
- Tasks

Computer Groups

The following is a list of computer groups added on the MOM Administrator Console after a successful HP ProLiant Management Pack installation, as indicated in Figure 2-6:

- HP ProLiant Insight Management Agents
- HP ProLiant Servers
- HP ProLiant Servers BL
- HP ProLiant Servers DL
- HP ProLiant Servers ML
- HP Systems Insight Manager Hosts

The following is a list of computer groups added after a successful HP Integrity Management Pack installation, as indicated in Figure 2-6:

- HP Integrity Insight Management Agents
- HP Integrity Servers
- HP Systems Insight Manager Hosts

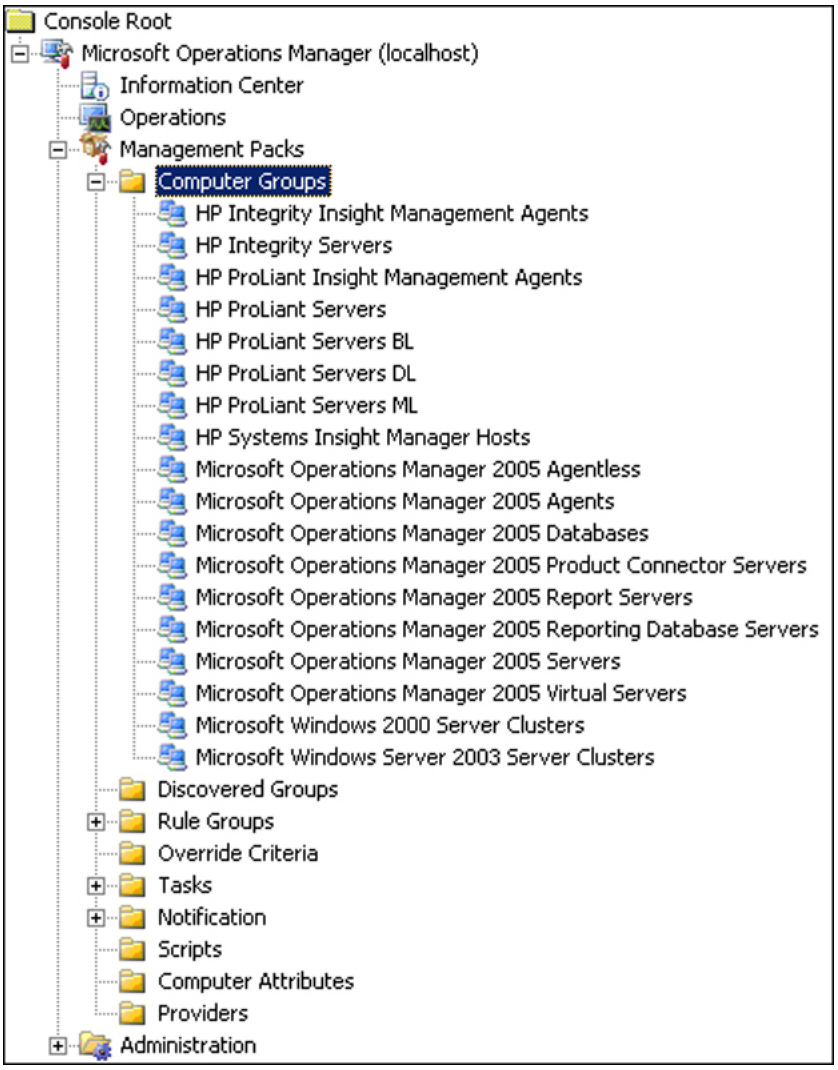


Figure 2-6: Computer Groups

Rule Groups

The following is a list of processing rule groups added on the MOM Administrator Console after a successful HP ProLiant Management Pack installation, as indicated in Figure 2-7:

- HP ProLiant Servers
- HP ProLiant Servers\HP Insight Management Agents
- HP ProLiant Servers\HP Insight Management Agents\Base Hardware
- HP ProLiant Servers\HP Insight Management Agents\Cluster Hardware
- HP ProLiant Servers\HP Insight Management Agents\Environmental
- HP ProLiant Servers\HP Insight Management Agents\Network Interface
- HP ProLiant Servers\HP Insight Management Agents\Remote Management Processor

- HP ProLiant Servers\HP Insight Management Agents\Server Storage
- HP ProLiant Servers\HP Insight Management Agents\State Monitoring and Service Discovery
- HP ProLiant Servers\Servers

The following is a list of processing rule groups added after a successful HP Integrity Management Pack installation, as indicated in Figure 2-7:

- HP Integrity Servers
- HP Integrity Servers\HP Insight Management Agents
- HP Integrity Servers\HP Insight Management Agents\Base Hardware
- HP Integrity Servers\HP Insight Management Agents\Cluster Hardware
- HP Integrity Servers\HP Insight Management Agents\Network Interface
- HP Integrity Servers\HP Insight Management Agents\Server Storage
- HP Integrity Servers\HP Insight Management Agents\State Monitoring and Service Discovery
- HP Integrity Servers\Servers

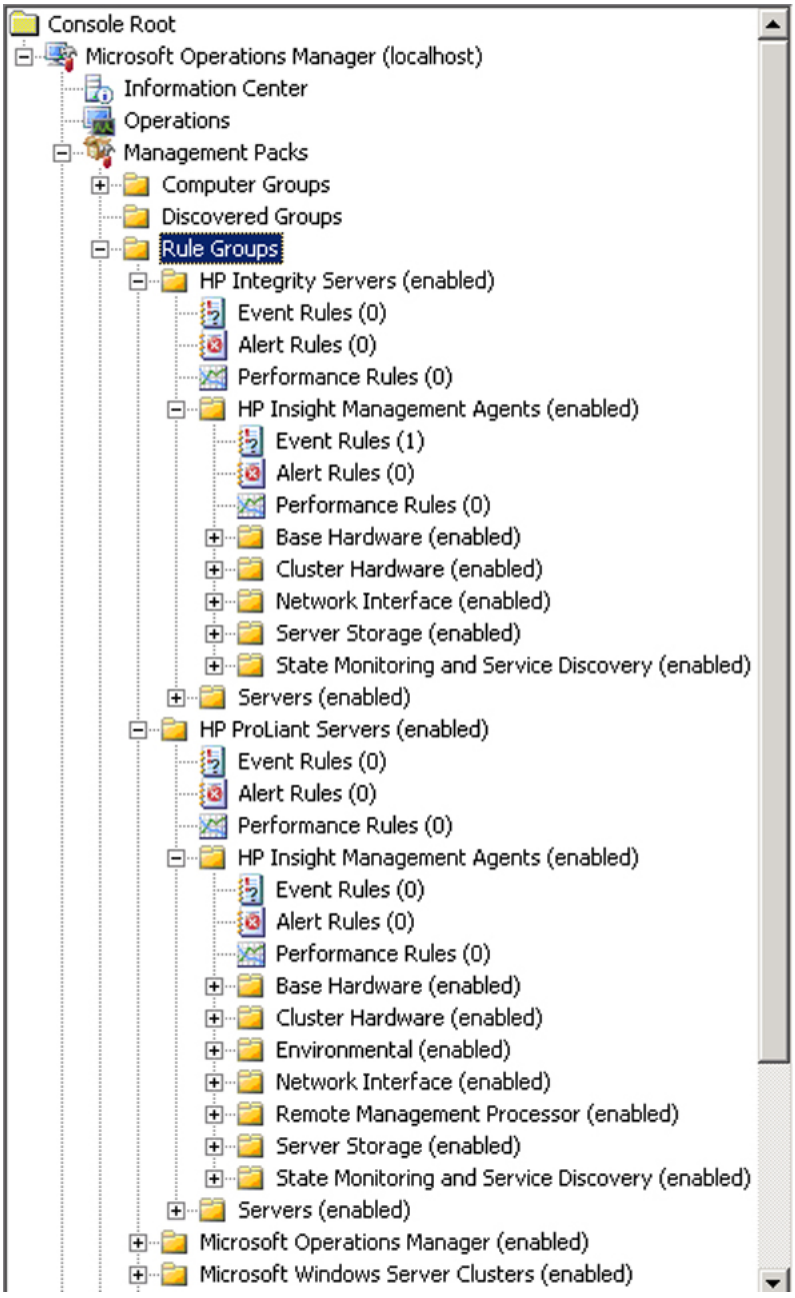


Figure 2-7: Rule Groups

Public Views

The following is a list of public views added on the MOM Operator Console after a successful HP ProLiant Management Pack installation, as indicated in Figure 2-8:

- HP ProLiant Servers
- HP ProLiant Servers\Alerts

- HP ProLiant Servers\Computer Groups
- HP ProLiant Servers\Computers
- HP ProLiant Servers\Events
- HP ProLiant Servers\HP Systems Insight Manager Hosts
- HP ProLiant Servers\Server Group Diagram
- HP ProLiant Servers\Service Level Exceptions
- HP ProLiant Servers\State
- HP ProLiant Servers\Task Status
- HP ProLiant Servers\BL Servers\Alerts
- HP ProLiant Servers\BL Servers\Computer Groups
- HP ProLiant Servers\BL Servers\Computers
- HP ProLiant Servers\BL Servers\Events
- HP ProLiant Servers\BL Servers\State
- HP ProLiant Servers\DL Servers\Alerts
- HP ProLiant Servers\DL Servers\Computer Groups
- HP ProLiant Servers\DL Servers\Computers
- HP ProLiant Servers\DL Servers\Events
- HP ProLiant Servers\DL Servers\State
- HP ProLiant Servers\ML Servers\Alerts
- HP ProLiant Servers\ML Servers\Computer Groups
- HP ProLiant Servers\ML Servers\Computers
- HP ProLiant Servers\ML Servers\Events
- HP ProLiant Servers\ML Servers\State

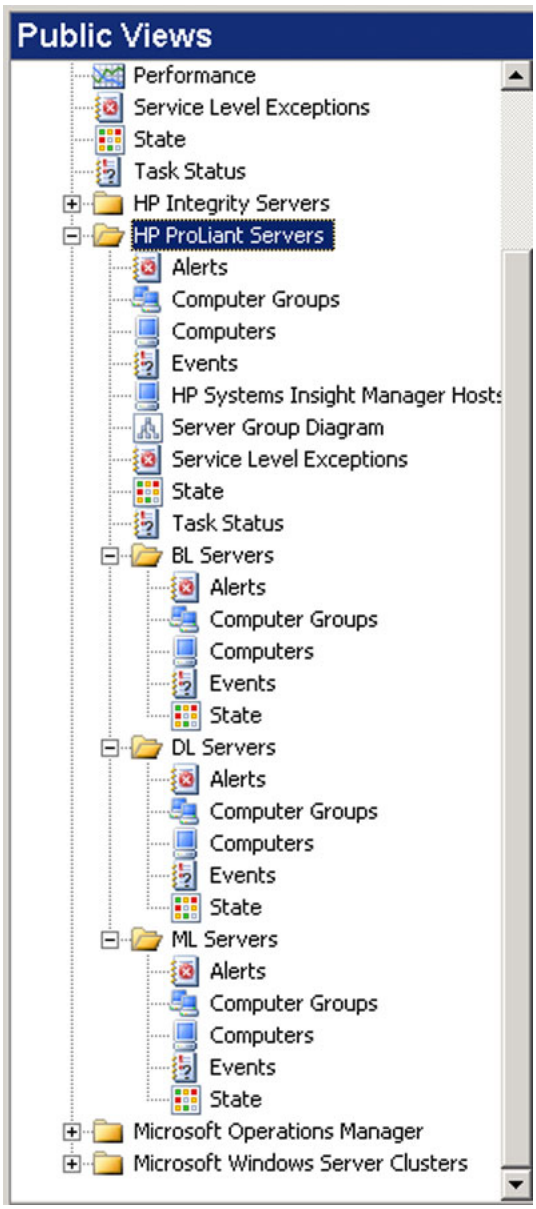


Figure 2-8: Public Views for the HP ProLiant Management Pack

The following is a list of public views added after a successful HP Integrity Management Pack installation, as indicated in Figure 2-9:

- HP Integrity Servers
- HP Integrity Servers\Alerts
- HP Integrity Servers\Computer Groups
- HP Integrity Servers\Computers
- HP Integrity Servers\Events
- HP Integrity Servers\HP Systems Insight Manager Hosts

- HP Integrity Servers\Server Group Diagram
- HP Integrity Servers\Service Level Exceptions
- HP Integrity Servers\State
- HP Integrity Servers\Task Status

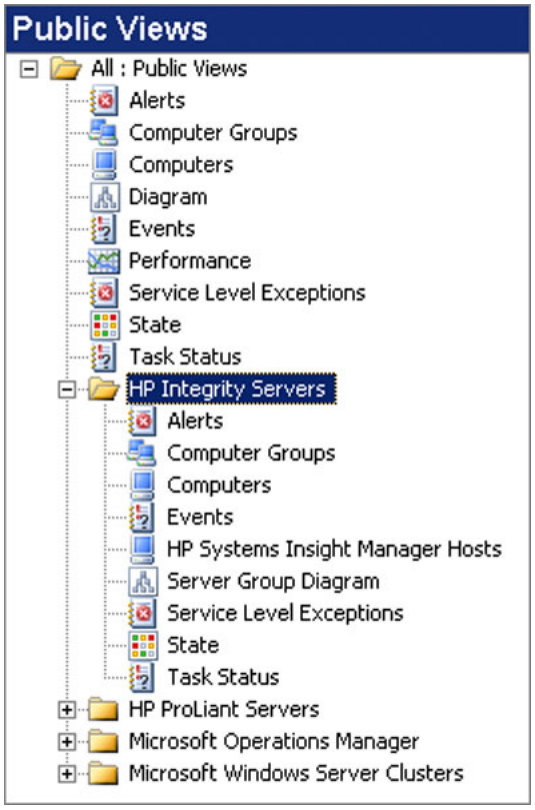


Figure 2-9: Public Views for the HP Integrity Management Pack

Tasks

The following is a list of tasks added on the MOM Operator Console after a successful HP ProLiant Management Pack installation, as indicated in Figure 2-10:

- HP ProLiant Servers
- HP ProLiant Servers\HP Lights-Out Management Processor
- HP ProLiant Servers\HP System Management Homepage
- HP ProLiant Servers\HP Systems Insight Manager
- HP ProLiant Servers\Discovery\Computer Model Discovery

The following is a list of tasks added after a successful HP Integrity Management Pack installation, as indicated in Figure 2-10:

- HP Integrity Servers

- HP Integrity Servers\HP System Management Homepage
- HP Integrity Servers\HP Systems Insight Manager

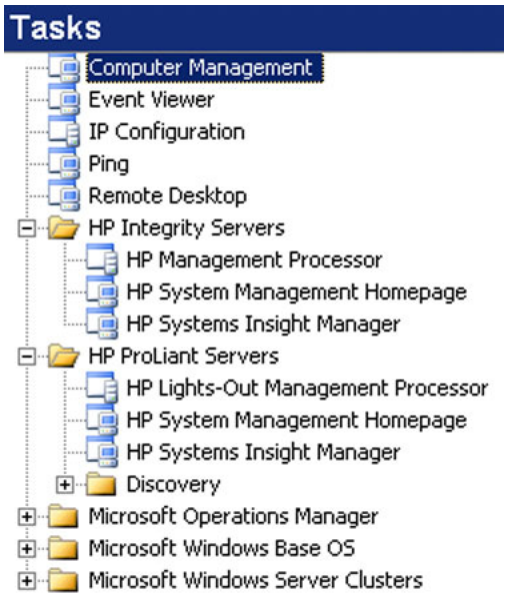


Figure 2-10: Tasks

Post-Installation Procedures

After the HP Management Packs for ProLiant and Integrity servers are installed, several steps must be completed to successfully discover and monitor HP servers using MOM 2005:

NOTE: These steps are standard MOM 2005 configuration procedures and are provided here for additional reference.

NOTE: After the post-installation procedures have been correctly applied to the target servers, the HP computer groups and public views automatically populate with discovered HP server data.

1. In the MOM Administrator Console, access the **Administration\Computers** folder, and configure the HP servers to be managed. This step might include the installation of MOM Agents by the Install/Uninstall Agent Wizard.

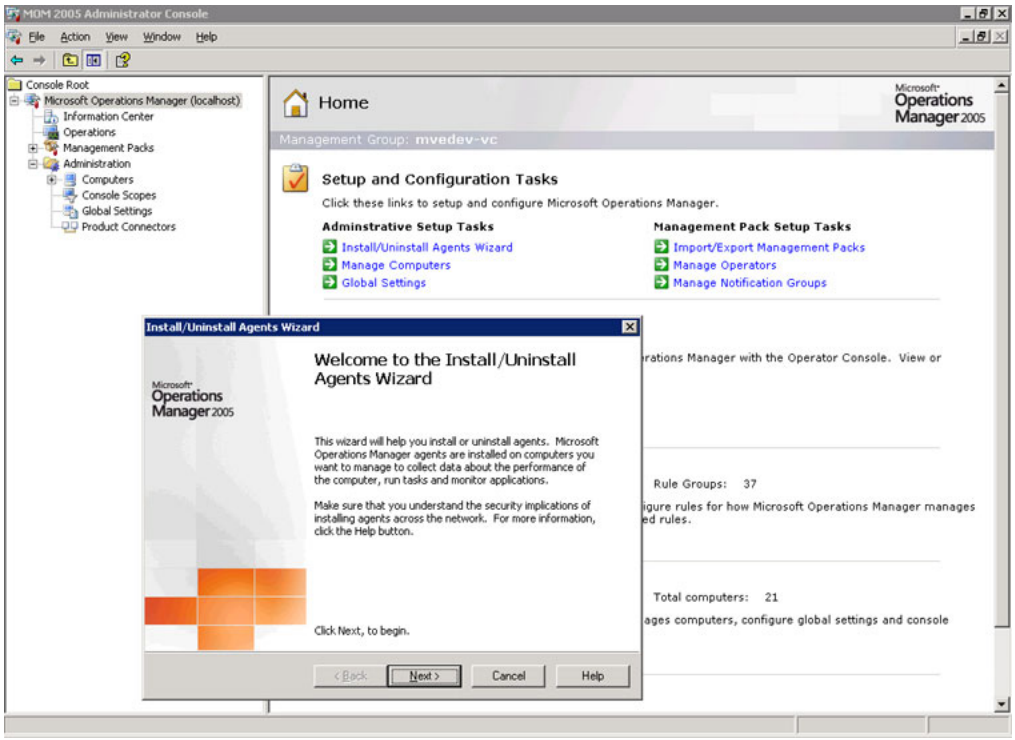


Figure 2-11: Install/Uninstall Agent Wizard

2. In the MOM Administrator Console, access the **Administration\Computers\Agent-managed Computers** folder.

3. The default Attribute Discovery setting for automated discovery is every 60 minutes. For immediate discovery, click **Run Attribute Discovery Now** to discover the HP server to be managed.

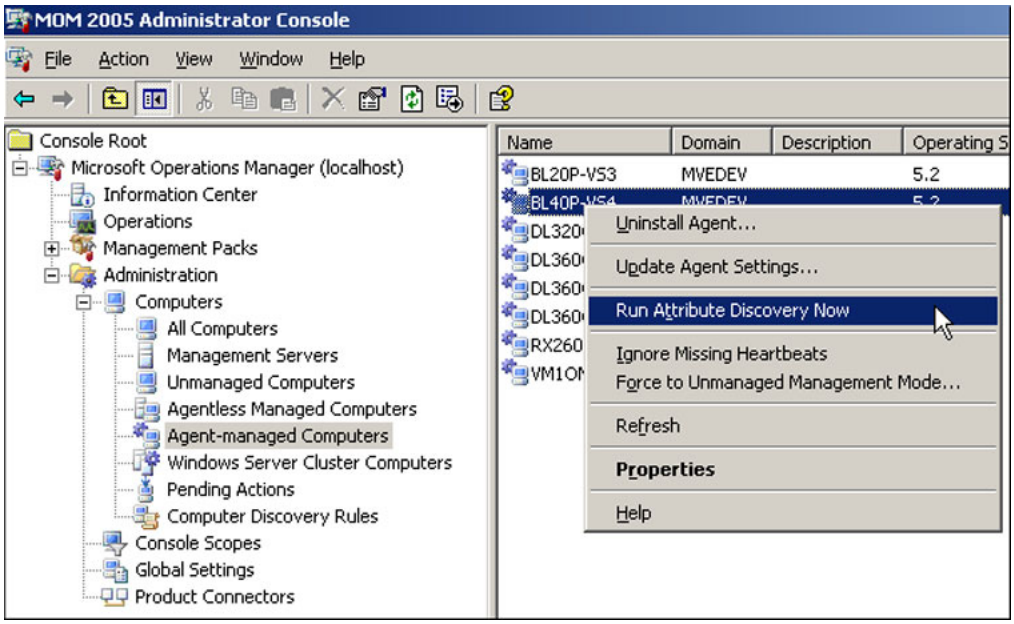


Figure 2-12: Run Attribute Discovery

NOTE: For further information, refer to the MOM 2005 user documentation or product help.

Uninstalling the Insight Management Pack for MOM 2000

If the HP Insight Management Pack (IMP) for MOM 2000 has been installed in a MOM 2005 environment, you must remove it before installing the HP Management Packs for ProLiant and Integrity servers. Failure to do so might lead to duplicate event and group entries and inoperative functionality under MOM 2005.

The current architecture for MOM management packs does not allow for the easy removal of an imported management pack. HP has documented the following procedures to remove the graphical and database entries associated with the HP IMP for MOM 2000.

Several elements of the HP IMP for MOM 2000, such as computer groups, computer attributes, tasks, scripts, and views, can easily be deleted from the MOM administrator or operator console tree manually. The processing rules and other database elements that might link to outstanding alerts cannot be removed immediately.

NOTE: Database elements linked to outstanding alerts cannot be removed until MOM Database Grooming completes. By default, Database Grooming has a grace period of four days. You can verify this period by selecting **Administration>Global Settings>Database Grooming.** Database Grooming might take longer than the specified timeframe to complete.

To remove the HP IMP for MOM 2000:

1. Access the MOM 2005 Operator Console, and verify no pending alerts are displayed.

   IMPORTANT: Resolve any pending alert listed in the MOM 2005 Operator Console before proceeding to step 2.

2. Exit the MOM 2005 Operator Console, and start the MOM 2005 Administrator Console.

   NOTE: The data tables referred to in this section are found in Appendix C, "HP IMP for MOM 2000 Data Tables."

3. Right-click each HP IMP subfolder under **Computer Groups,** and select **Delete Computer Group.** Table C-1 in Appendix C contains a list of all computer groups installed by the HP IMP for MOM 2000.

   NOTE: A confirmation window appears with options to delete subgroups under the Computer Groups folder. Because there are no subgroups under Computer Groups, leave the default options selected and click **OK.**

4. Select the **Computer Attributes** folder.
5. Right-click each HP Insight computer attribute, and select **Delete.** Table C-2 in Appendix C contains a list of all computer attributes installed by the HP IMP for MOM 2000.
6. Right-click the top-level HP IMP **Rule Groups** folder, and select **Delete.** Table C-3 in Appendix C lists all processing rules installed by the HP IMP for MOM 2000.
7. Select **Delete the rule group and all child rule groups.**

Figure 2-13: Delete Rule Group

8. If the following error message displays, proceed with step 9 to disable the remaining rule groups. If no error message displays, proceed to step 10.

Figure 2-14: Rule Group Deletion Error

9. Right-click the remaining HP IMP Rule Groups, select **Properties**, and deselect the **Enabled** check box to disable the rule groups. No further processing will occur under these rule groups.

   IMPORTANT: The disabled rule groups cannot be removed until MOM Database Grooming removes any outstanding alerts associated with the remaining processing rules.

   By default, Database Grooming has a grace period of four days. You can verify this period by selecting **Administration>Global Settings>Database Grooming**. After Database Grooming completes, go to step 4 to remove the remaining rule groups.

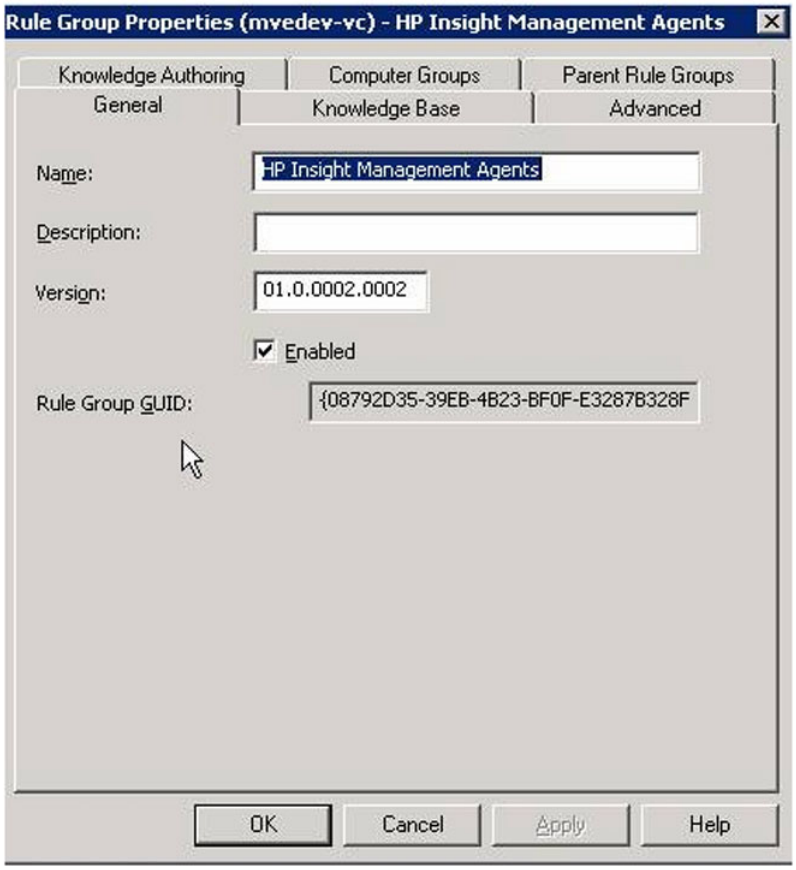


Figure 2-15: Disabling MOM Rule Groups

10. Right-click each HP IMP item in the Scripts folder, and select **Delete.** Table C-4 in Appendix C lists all scripts installed by the HP IMP for MOM 2000.
11. Right-click each HP IMP item under the Providers folder, and select **Delete.** Table C-5 in Appendix C lists all providers installed by the HP IMP for MOM 2000.
12. Open the MOM 2005 Operator Console.
13. Right-click **HP Insight Management** under the Public View folder, and select **Delete.** Table C-6 in Appendix C lists all views installed by the HP IMP for MOM 2000.

With these steps completed, the HP ProLiant Management Pack for MOM 2005 can now be installed.

NOTE: The HP ProLiant Management Pack can be installed after the HP IMP Rule Groups have been disabled and removed, as indicated in steps 5, 6, and 7. The database grooming described in step 7 does not need to complete before installing the HP ProLiant Management Pack.

3

Using HP Management Packs

This chapter describes how to use the features provided with the HP ProLiant Management Pack for MOM 2005 and the HP Integrity Management Pack for MOM 2005. Functionality that is specific to a particular server platform or management pack is noted in each section.

The HP Management Packs for ProLiant and Integrity Servers includes the following major elements:

- Computer Groups
- Computer Attributes
- Rule Groups
- Public View
- State Monitoring
- Tasks

Prerequisites

Before attempting to use the HP Management Packs for ProLiant and Integrity Servers, be sure that the following conditions have been met:

- The appropriate HP Management Pack for MOM 2005 has been installed according to the procedures defined in Chapter 2.
- The SNMP service is installed, active, and configured with a proper community string on all HP servers to be managed before installing the Insight Management Agents. SNMP is required for the correct installation and operation of the Insight Management Agents and the discovery and hardware state monitoring of HP servers within MOM 2005.
- For HP ProLiant Servers to be managed by MOM 2005, HP Insight Management Agents versions 5.50 to 7.10 must be installed and active.
- For HP Integrity Servers to be managed by MOM 2005, HP Insight Management Agents versions 2.3 to 3.0 must be installed and active.

Computer Groups

A MOM computer group is a collection of computers that share a common set of attributes. Each computer group can be associated with one or more processing rule groups.

The HP ProLiant Management Pack for MOM 2005 includes the following predefined computer groups:

- HP ProLiant Insight Management Agents—Contains computers with HP ProLiant Insight Management Agents installed
- HP ProLiant Servers—Contains computers identified as HP ProLiant servers
- HP ProLiant Servers BL—Contains computers identified as HP ProLiant BL servers
- HP ProLiant Servers DL—Contains computers identified as HP ProLiant DL servers
- HP ProLiant Servers ML—Contains computers identified as HP ProLiant ML servers
- HP Systems Insight Manager Hosts—Contains computers with HP Systems Insight Manager installed

The HP Integrity Management Pack for MOM 2005 includes the following predefined computer groups:

- HP Integrity Insight Management Agents—Contains computers with HP Integrity Insight Management Agents installed
- HP Integrity Servers—Contains computers identified as a HP Integrity servers
- HP Systems Insight Manager Hosts—Contains computers with Systems Insight Manager installed

Discovering HP Servers

The HP Management Packs for MOM 2005 are designed to automatically identify and populate HP ProLiant and Integrity servers into their appropriate computer groups, which is achieved primarily through a predefined HP discovery rule that runs every 30 minutes by default. Automatic discovery is supplemented by a separate task that can be used to perform manual system discovery in between scheduled discovery times.

For more information on the discovery mechanisms delivered with the HP Management Packs for ProLiant and Integrity servers, refer to the sections “State Monitoring and Service Discovery Rules” and “Discovery Tasks.”

Rule Groups

The HP Management Packs for ProLiant and Integrity servers include a collection of predefined rules that discover and monitor HP hardware and management services and automate the presentation of HP events within MOM 2005. This capability extends the functionality of MOM 2005, enabling users to monitor HP server hardware and Windows resources through a common MOM Operator Console.

HP Event Processing Rules

The HP Management Packs for ProLiant and Integrity servers create event processing rules groups. These rule groups identify HP events written to the Windows Event Log by Insight Management Agents and management services and display them as MOM 2005 alerts.

The HP ProLiant Management Pack for MOM 2005 includes the following rule groups. A complete list of events can be found in Appendix A of this guide:

- HP ProLiant Servers
- HP ProLiant Servers\HP Insight Management Agents\Base Hardware
- HP ProLiant Servers\HP Insight Management Agents\Cluster Hardware
- HP ProLiant Servers\HP Insight Management Agents\Environmental
- HP ProLiant Servers\HP Insight Management Agents\Network Interface
- HP ProLiant Servers\HP Insight Management Agents\Remote Management Processor
- HP ProLiant Servers\HP Insight Management Agents\Server Storage
- HP ProLiant Servers\HP Insight Management Agents\State Monitoring and Service Discovery
- HP ProLiant Servers\Servers

The HP Integrity Management Pack for MOM 2005 includes the following rule groups. A complete list of events can be found in Appendix B of this guide:

- HP Integrity Servers
- HP Integrity Servers\HP Insight Management Agents\Base Hardware
- HP Integrity Servers\HP Insight Management Agents\Cluster Hardware
- HP Integrity Servers\HP Insight Management Agents\Network Interface
- HP Integrity Servers\HP Insight Management Agents\Server Storage
- HP Integrity Servers\HP Insight Management Agents\State Monitoring and Service Discovery
- HP Integrity Servers\Servers

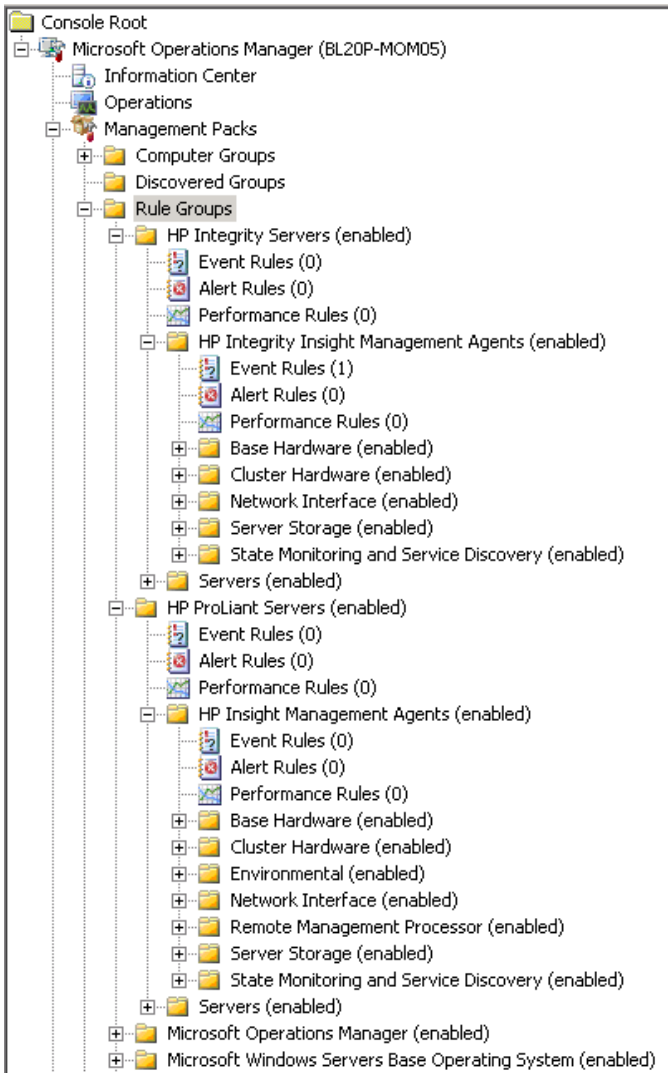


Figure 3-1: Rule Groups

State Monitoring and Service Discovery Rules

The HP Management Packs for ProLiant and Integrity servers contain additional event processing rules to monitor system state and to perform server discovery. These rules are contained in the rule group "State Monitoring and Service Discovery" for both management packs.

The HP ProLiant Management Pack for MOM 2005 contains the following state monitoring and service discovery rules:

- HP ProLiant Servers Computer Model Discovery—This timed event executes every 30 minutes to perform Computer Model Discovery for HP ProLiant Servers. The event will identify the model platform of each server and reclassify it under one of the following HP ProLiant Server computer groups:

  — HP ProLiant Servers BL

  - HP ProLiant Servers DL
  - HP ProLiant Servers ML

- HP ProLiant Servers Service Discovery—This timed event executes every 5 minutes by default to discover and monitor the state of HP server hardware and management services. The resulting state information can be seen in the "State" view associated with the "HP ProLiant Servers" and "HP Integrity Servers" folders. This event will also generate an event based on the state data received.

The HP Integrity Management Pack for MOM 2005 contains the following state monitoring and service discovery rules:

- HP Integrity Servers Computer Model Discovery—This timed event executes every 30 minutes to perform Computer Model Discovery for HP Integrity Servers. The event will identify the model platform of each server and reclassify it under the HP Integrity Servers computer group.
- HP Integrity Servers Service Discovery—This timed event executes every 5 minutes by default to discover and monitor the state of HP server hardware and management services. The resulting state information can be seen in the "State" view associated with "HP Integrity Servers" folder. This event will also generate an event based on the state data received.

Knowledge Base

The HP Management Packs for ProLiant and Integrity servers provide knowledge base data within their event processing rules. This data can be used to identify the root cause of an event and assist in reducing the time to resolution. Knowledge base data can be edited to include environment or customer-specific information.

To view and edit HP knowledge base data:

1. Double-click a predefined event processing rule in the MOM Administrator Console.
2. Select the **Knowledge Base** tab from the Event Rule Properties window.
3. Edit the **Company Knowledge Base** field to include any environment or customer-specific information.

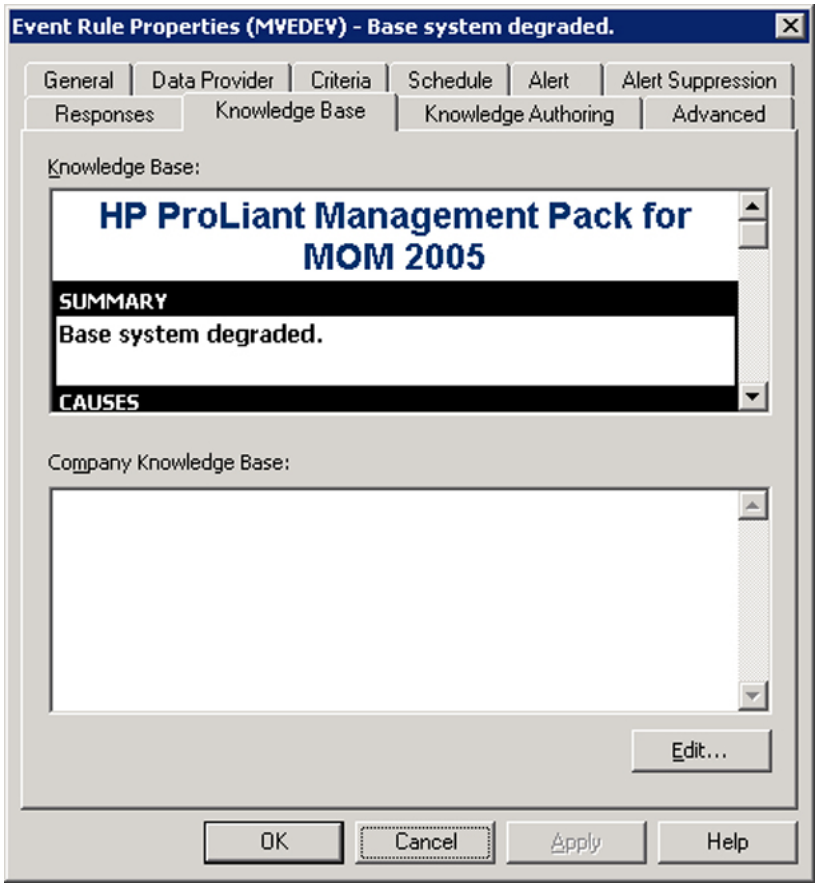


Figure 3-2: Event Rule Properties Knowledge Base tab

Customizing Event Processing Rules

HP event processing rules are predefined for immediate use but can be easily customized to meet specific requirements. The following lists some common reasons for modifying an event processing rule:

- Disabling or enabling a rule
- Changing the alert severity level
- Modifying data processing or alert-suppressing criteria
- Adding a custom response to selected events
- Including environment-specific knowledge base data

To customize a rule:

1. Double-click the rule entry to be edited from the appropriate Event Processing Rules folder.
2. Select **Properties** from the menu list.

NOTE: For information on customizing MOM event processing rules, refer to the MOM 2005 user documentation and help information.

Public Views

The MOM 2005 Operator Console provides a collection of folders and windows for viewing information stored in the MOM database. The HP Management Packs for ProLiant and Integrity servers include predefined public views that present information about each HP server and associated alerts, as indicated in Figure 3-3.

The HP ProLiant Management Pack for MOM 2005 creates specific views in the HP ProLiant Servers folder and the HP Integrity Management Pack for MOM 2005 creates specific views in the HP Integrity Servers folder under MOM Public Views. Both folders contain the following views:

- Alerts
- Computer Groups
- Computers
- Events
- HP Systems Insight Manager Hosts
- Server Group Diagram
- Service Level Exceptions
- State
- Task Status

The HP ProLiant Management Pack for MOM 2005 also creates the following subfolders under the HP ProLiant Servers folder in the public view:

- BL Servers—Provides views for all ProLiant BL servers
- DL Servers—Provides views for all ProLiant BL servers
- ML Servers—Provides views for all ProLiant BL servers

Each subfolder contains the following views:

- Alerts
- Computer Groups
- Computers
- Events
- State

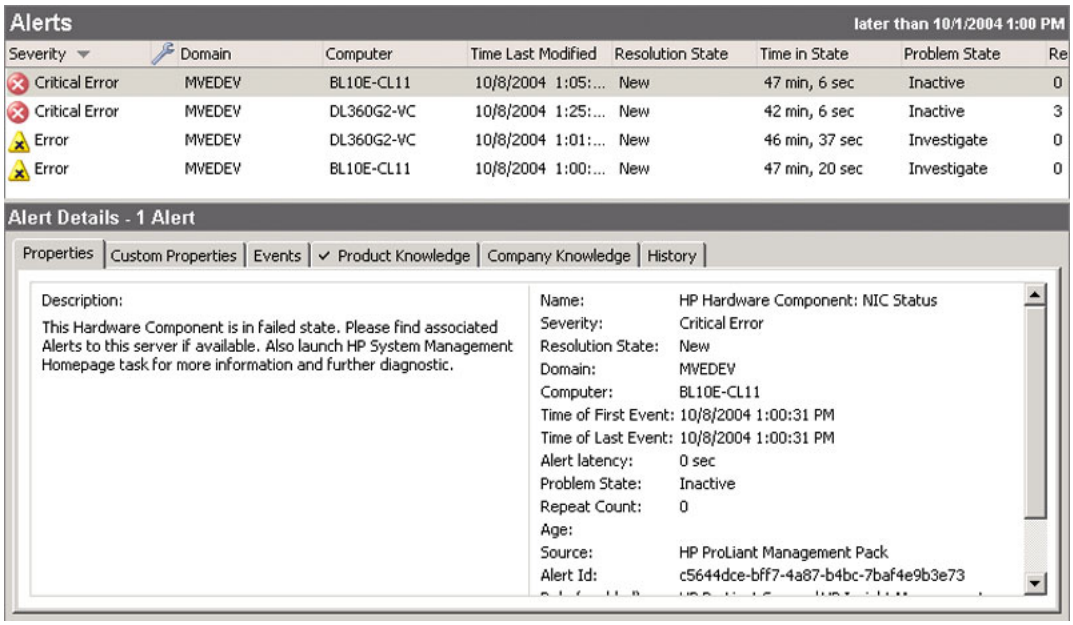


Figure 3-3: Public view

NOTE: In the public view, the State view under the All: Public Views folder might show a state for "HP Server" with no state details. For information on accessing server hardware details, refer to the "HP Hardware State" section.

Alerts View

The Alerts view displays all open alerts associated with computers listed the Alerts pane, as indicated in Figure 3-4. To display details for an individual alert, select the alert from the Alerts pane. Alert details include additional information such as properties, system conditions, and product knowledge.

The predefined event processing rules included with the HP Management Packs for ProLiant and Integrity Servers are designed to automatically identify and display HP server events received in the Windows Event Log as MOM 2005 alerts.

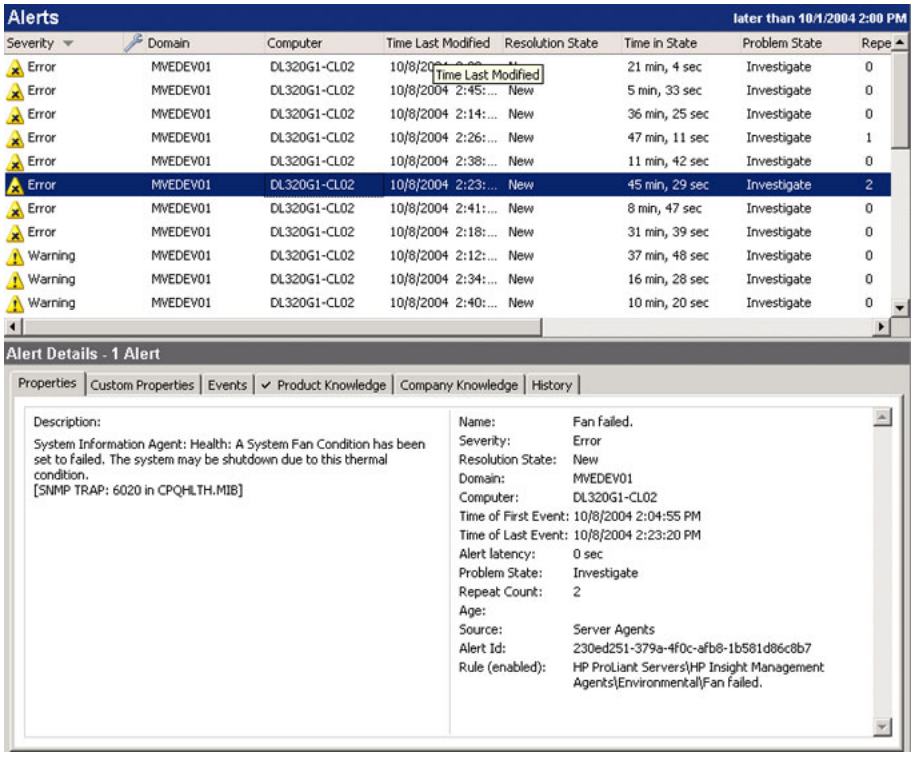


Figure 3-4: Alerts view

Analyzing HP Alerts

HP alerts contain server hardware and services information that enable administrators to identify the event root cause and implement a timely and effective response.

For example, Figure 3-4 shows a failed fan in an HP ProLiant server. The contents of the alert properties tab identify the level of severity (Error), the system that generated the event (DL320G1-CL02), and the agent source (Server Agents).

The Product Knowledge tab shown in Figure 3-5 indicates suggested resolutions to the alert.

The administrator can use the information to implement a rapid response and maintain systems availability. For additional in-depth systems data, the administrator can view the HP System Management Homepage on the individual server, or use HP SIM to manage multiple systems, using the MOM Tasks provided with the HP Management Packs for ProLiant and Integrity servers.

Refer to the “Tasks for HP Servers" section for more information on launching the HP Systems Management Homepage or HP SIM from within MOM 2005.

For more information on the Tasks provided with the HP Management Packs for ProLiant and Integrity Servers, refer to the “Tasks for HP Servers” section.

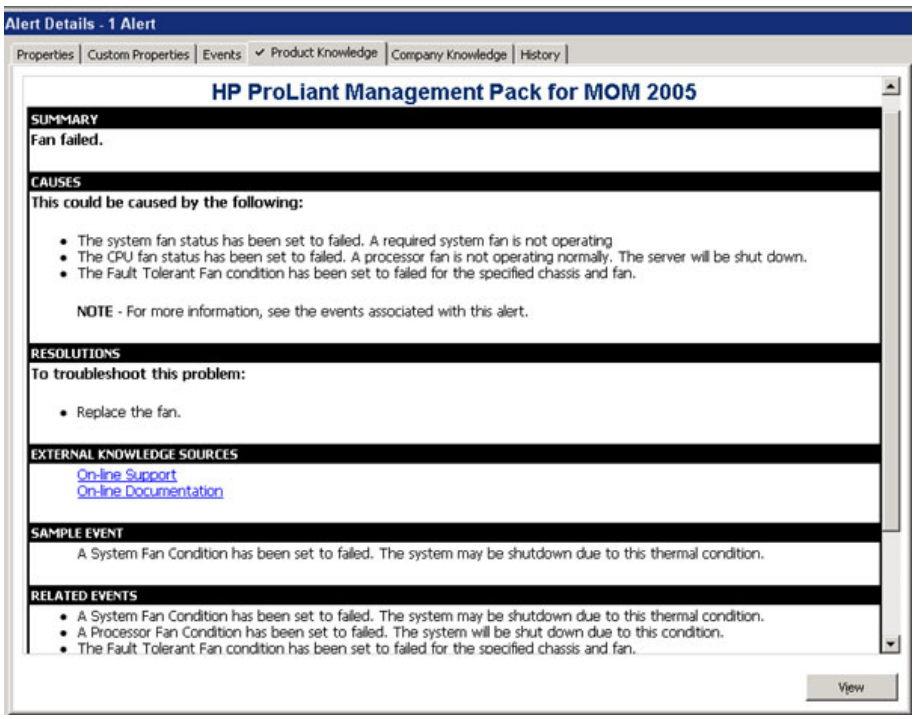


Figure 3-5: Product Knowledge tab

Computer Groups View

The Computer Groups view displays summary information that includes the overall state and total number of open alerts for all computers in the specified group.

To display details for a computer group, select the appropriate group in the **Computer Groups** pane. These details include attributes, rule groups, computer groups, and role information associated with the selected group.

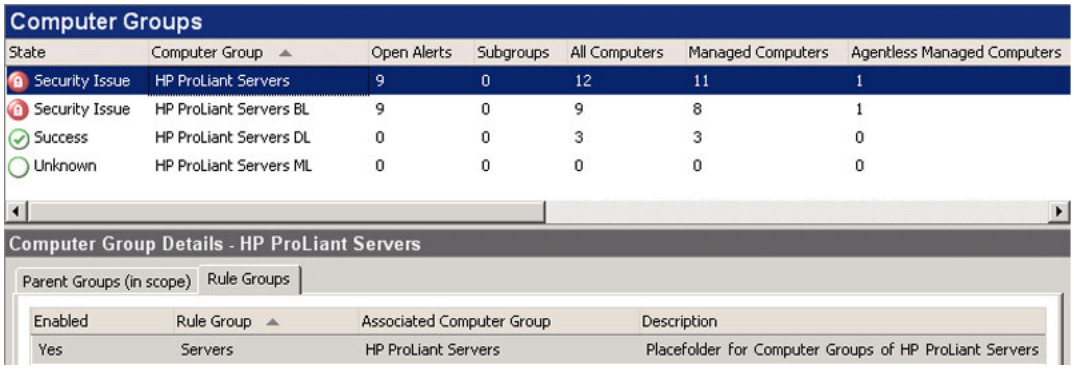


Figure 3-6: Computer Groups view

Computers View

The Computers view displays summary information for all computers in a group. The summary information includes the overall system state, and total number of open alerts.

To display details for a server, select the appropriate server in the **Computers** pane. These details include attributes, rule groups, computer groups, and role information for the selected server.

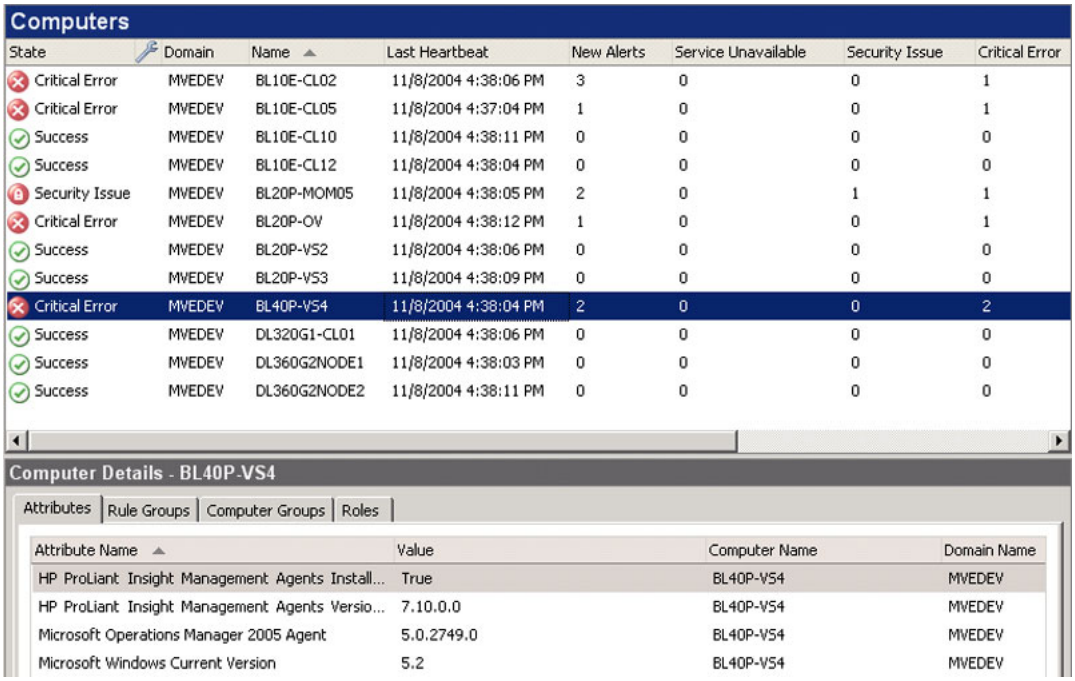


Figure 3-7: Computers View

Computer Attributes

To view computer attributes for an individual server, select the **Attributes** tab from the Computer Details pane, as indicated in Figure 3-7.

The HP ProLiant Management for MOM 2005 provides the following attributes:

- HP ProLiant Insight Management Agents Installed—The value “True” indicates that the ProLiant Insight Management Agents are installed on this computer.
- HP ProLiant Insight Management Agents Version Number—The value indicates the version number of the ProLiant Insight Management Agents.

The HP Integrity Management Pack for MOM 2005 provides the following attributes:

- HP Integrity Insight Management Agents Installed—The value “True” indicates that the Integrity Insight Management Agents are installed on this computer.
- HP Integrity Insight Management Agents Version Number—The value indicates the version number of the Integrity Insight Management Agents.

- HP Integrity Server—This attribute indicates that the selected server is a HP Integrity server.

Computer Rule Groups View

The Computer Rule Groups view lists all rule groups and associated computer groups for a selected server, as indicated in Figure 3-8.

To view rule groups, select the **Rule Groups** tab from the Computer Details pane.

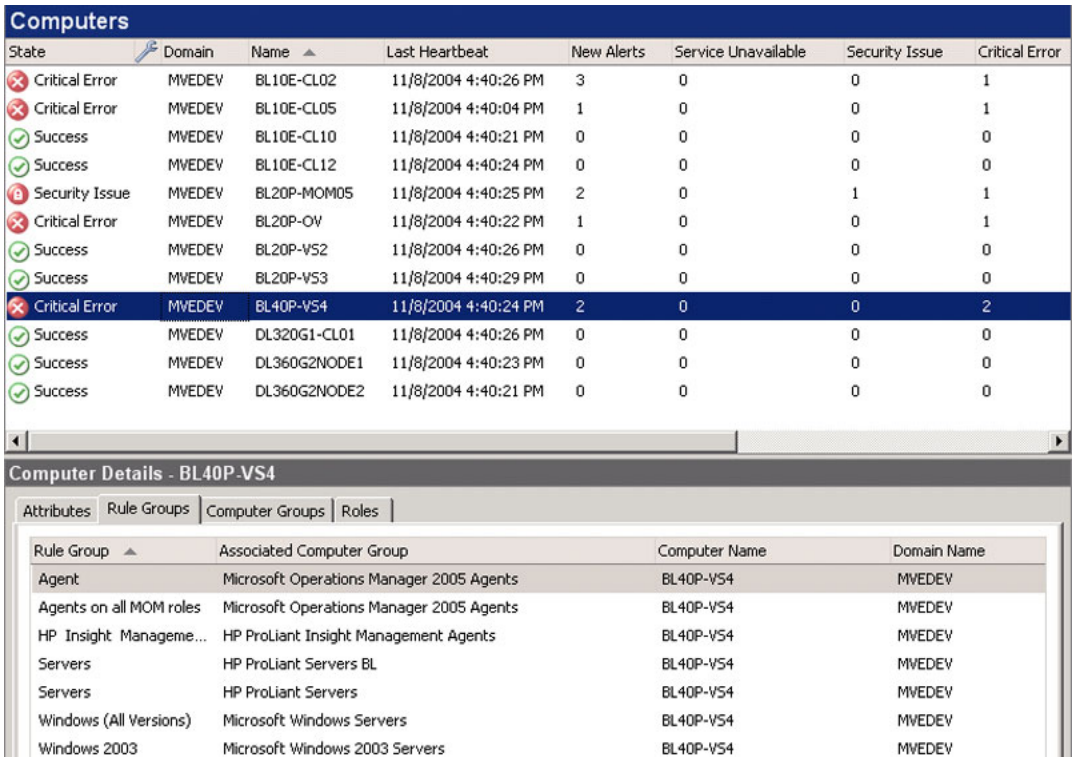


Figure 3-8: Computer Rule Groups view

Computer Groups View

To view computer groups associated with a selected server, click the **Computer Groups** tab from the Computer Details pane, as indicated in Figure 3-9.

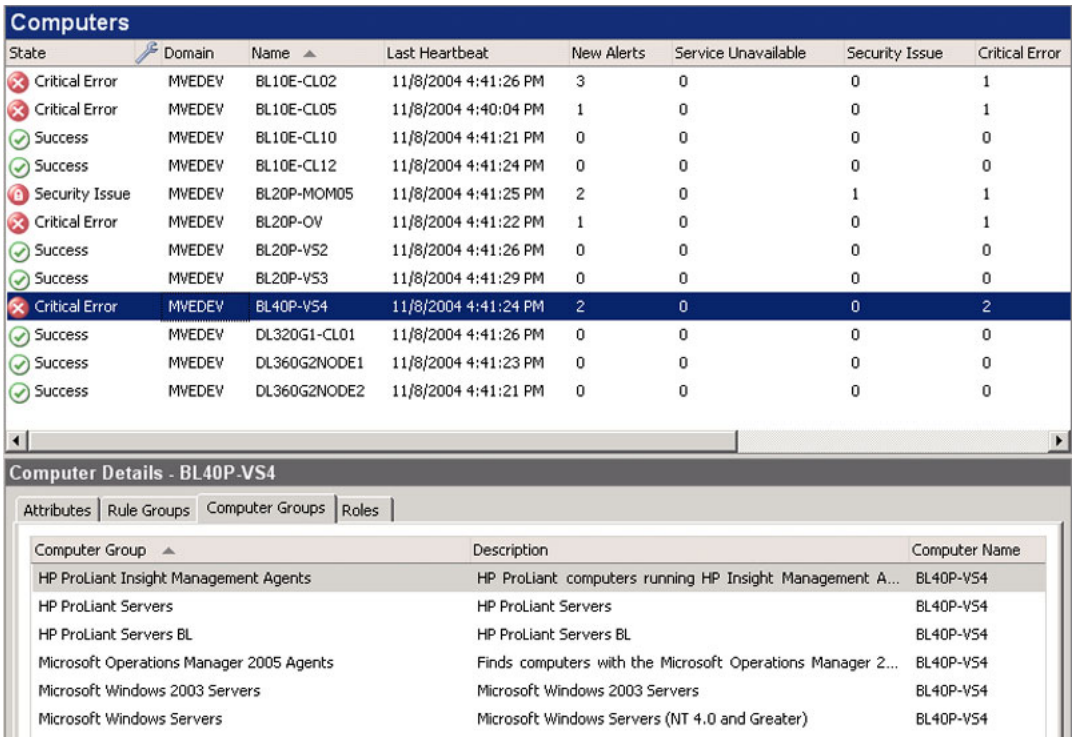


Figure 3-9: Computer Groups View

Computer Roles View

The Computer Roles view displays additional information about the hardware configuration, HP agents, and other HP management tools associated with a selected server, as indicated in Figure 3-10:

- The HP Agent table lists the installed HP agent and management services installed.
- The HP Hardware table lists the major hardware components for an individual server.
- The HP Server table lists the important server attributes to help administrators quickly determine server configuration and capacity. The list of attributes includes the following information:
  - — Manufacturer—The server manufacturer name
  - — Model—The server family and model
  - — Physical Memory (MB)—The total physical server memory in megabytes
  - — Lights-Out Management Processor IP—The IP address of the Management Processor in an HP ProLiant server or a non-cellular Integrity server
  - — Management Processor IP—The IP address of the Management Processor in a cellular HP Integrity server
  - — Serial Number—The server serial number
  - — System Firmware—The server firmware revision

— System Type—The server platform and processor type

— Total Disk (GB)—The total server hard drive storage in gigabytes

To view server role information, select the **Computer Roles** tab from the Computer Details pane.

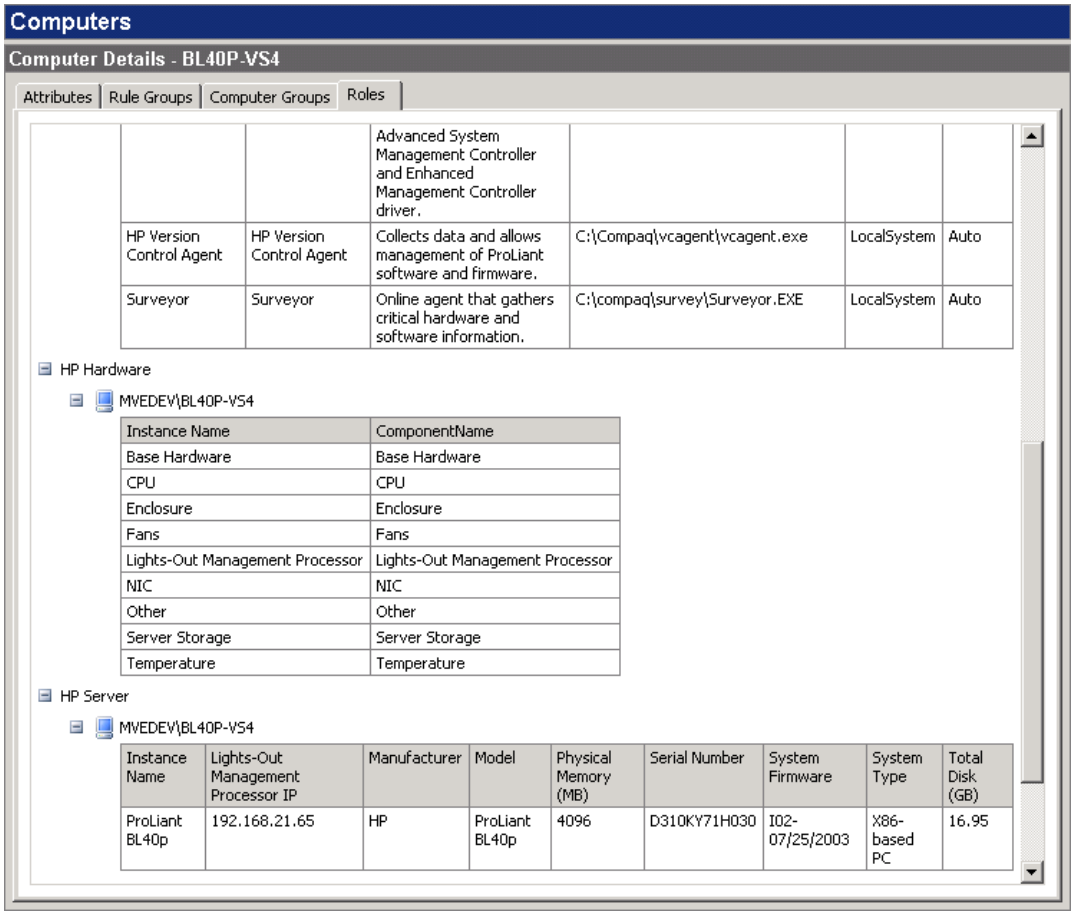


Figure 3-10: Computer Roles view

Events View

The Events view displays all active HP hardware and services events associated with a selected computer group.

HP Systems Insight Manager Hosts

The HP Systems Insight Manager Hosts folder lists all computers that host the HP SIM application for cross-platform hardware resource life cycle management, as indicated in Figure 3-11.

In addition to listing the available HP SIM hosts, the HP Management Packs for ProLiant and Integrity servers include a task that enables HP SIM to be launched from within MOM 2005.

For more information on the HP SIM task, refer to the section, “Tasks for HP Server.”

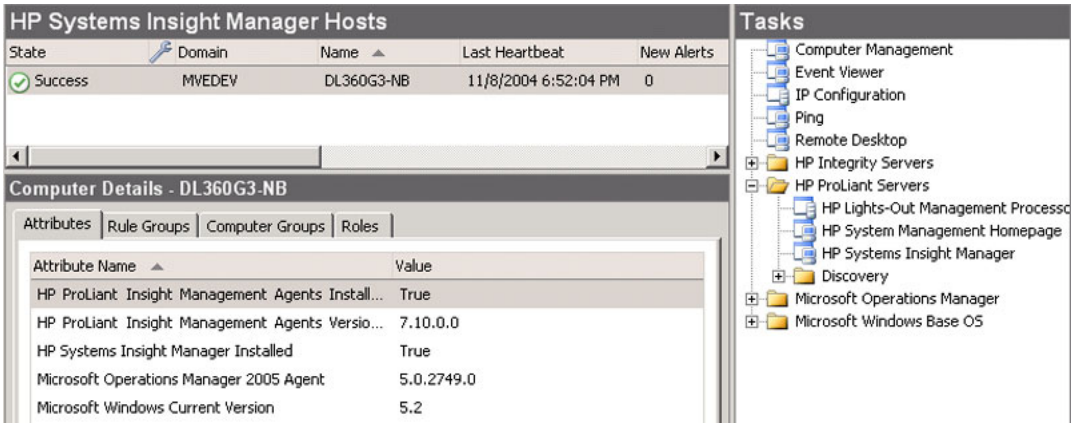


Figure 3-11: HP SIM Hosts View

Server Group Diagram View

The Server Group Diagram view provides a graphical display of groups and associated computers, as indicated in Figure 3-12. HP ProLiant and Integrity servers are displayed in the Server Group Diagram display with an HP logo and an overall server status icon. Moving the mouse pointer over an individual computer displays additional information about the server and its condition.

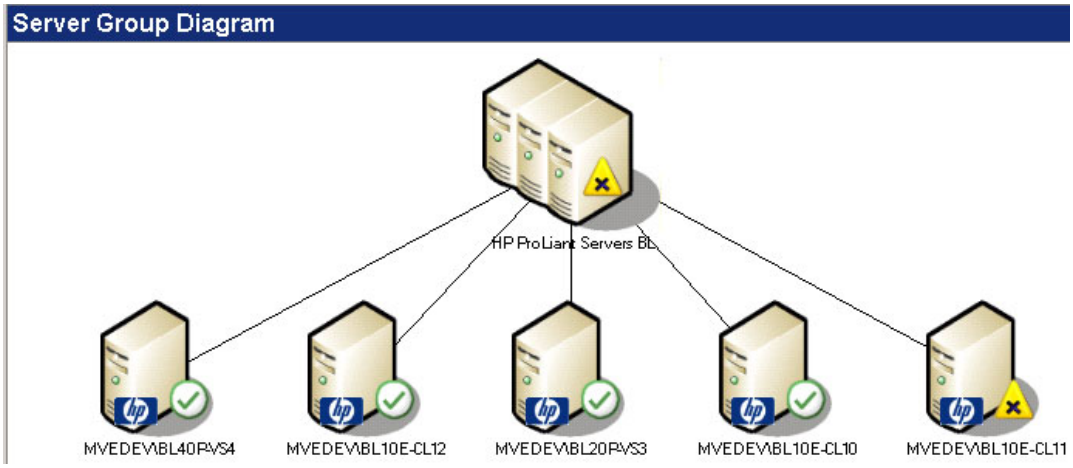


Figure 3-12: Server Group Diagram view

Service Level Exceptions

The Service Level Exceptions folder displays all service level exceptions associated with the selected computer group.

State View

The State view displays the overall status of HP server hardware, HP Insight Management Agents, and other HP management services associated with the listed computers, as indicated in Figure 3-13.

To view detailed information on the condition of HP Insight Management Agents and other management services for an individual computer, select the computer in the **HP Agent** column**.** The associated data displays in the State Details pane.

To view detailed state information for HP hardware subsystems for an individual computer, select the computer in the **HP Hardware** column. The associated data displays in the State Details pane.

NOTE: For more information on the State Monitoring functionality provided with the HP Management Packs for ProLiant and Integrity servers, refer to the section, "State Monitoring for HP Servers."

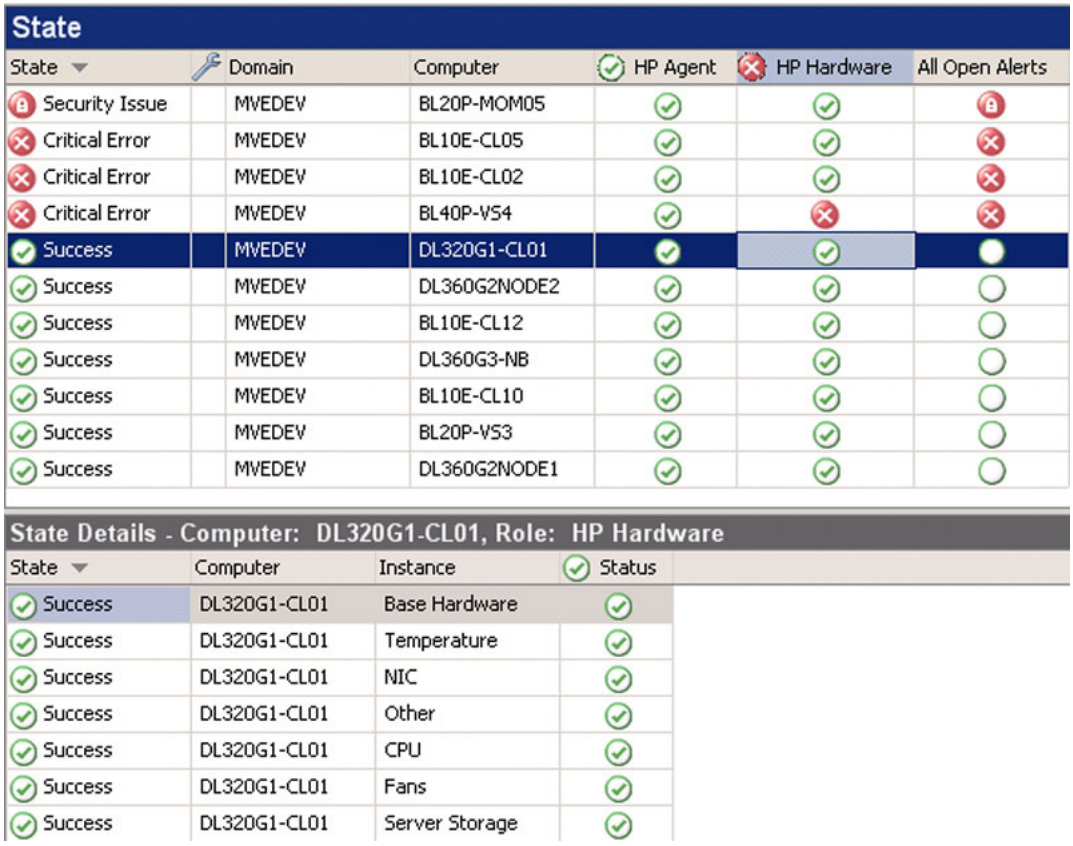


Figure 3-13: State view

Task Status View

The Task Status view lists all tasks that have been launched in association with the selected group, as indicated in Figure 3-14. To view the details on an individual task in the Event Details pane, select the task from the **Task Status** pane.

NOTE: For more information on the Tasks provided with the HP Management Packs for ProLiant and Integrity Servers, refer to the section, “Tasks for HP Servers.”

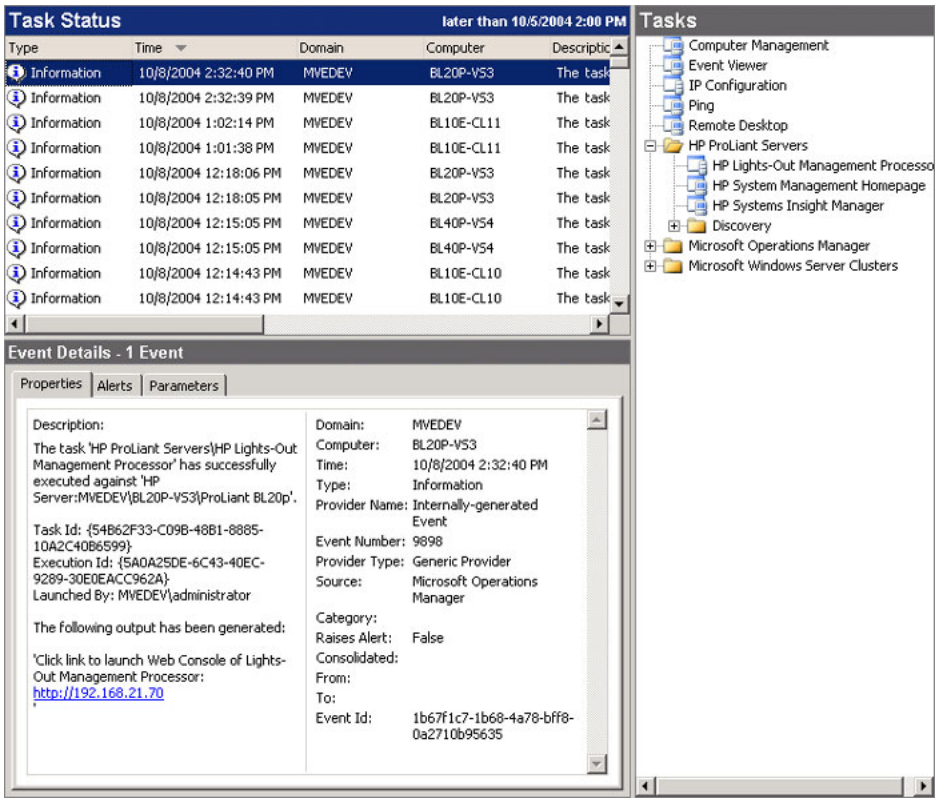


Figure 3-14: Task Status view

State Monitoring for HP Servers

The HP Management Packs for ProLiant and Integrity servers provide state monitoring for HP hardware, HP Insight Management Agents, and other HP management services.

To view HP state monitoring data, select **State** under the HP ProLiant Servers folder or the HP Integrity Servers folders in Public Views.

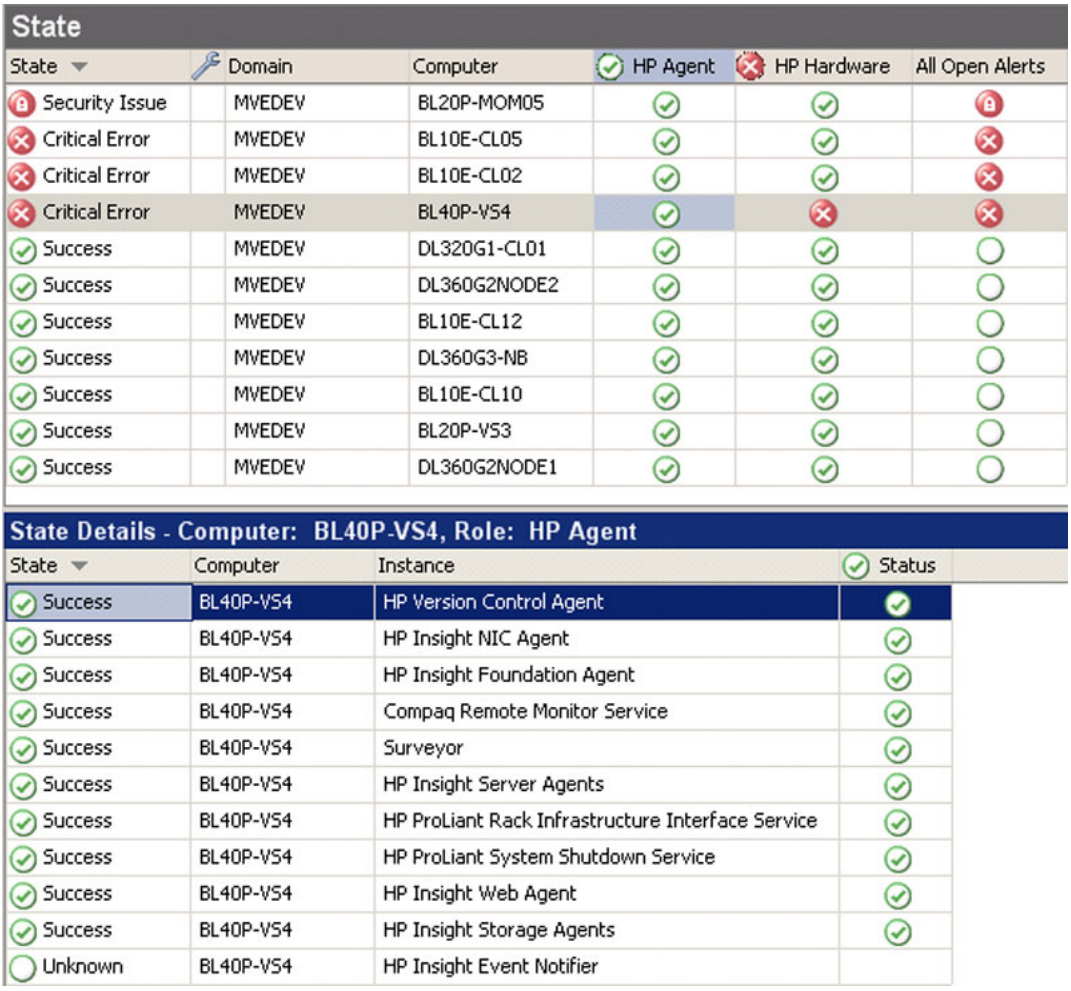
When state changes are listed under the HP Hardware, HP Agent, or HP Hardware views, a corresponding alert is also generated in the MOM Operator Console.

HP Agent State

You can view the overall state of HP Insight Management Agents and management services for an individual server in the State pane of the HP Agent table entry. The State Details pane lists all the agent services and their associated condition.

The conditions available in State pane of the HP Agent view translate as follows:

- Success—Service is running
- Critical Error—Service has unexpectedly failed to run
- Unknown—Service is disabled



State

State	Domain	Computer	HP Agent	HP Hardware	All Open Alerts
Security Issue	MVEDEV	BL20P-MOM05			
Critical Error	MVEDEV	BL10E-CL05			
Critical Error	MVEDEV	BL10E-CL02			
Critical Error	MVEDEV	BL40P-VS4			
Success	MVEDEV	DL320G1-CL01			
Success	MVEDEV	DL360G2NODE2			
Success	MVEDEV	BL10E-CL12			
Success	MVEDEV	DL360G3-NB			
Success	MVEDEV	BL10E-CL10			
Success	MVEDEV	BL20P-VS3			
Success	MVEDEV	DL360G2NODE1			

State Details - Computer: BL40P-VS4, Role: HP Agent

State	Computer	Instance	Status
Success	BL40P-VS4	HP Version Control Agent	
Success	BL40P-VS4	HP Insight NIC Agent	
Success	BL40P-VS4	HP Insight Foundation Agent	
Success	BL40P-VS4	Compaq Remote Monitor Service	
Success	BL40P-VS4	Surveyor	
Success	BL40P-VS4	HP Insight Server Agents	
Success	BL40P-VS4	HP ProLiant Rack Infrastructure Interface Service	
Success	BL40P-VS4	HP ProLiant System Shutdown Service	
Success	BL40P-VS4	HP Insight Web Agent	
Success	BL40P-VS4	HP Insight Storage Agents	
Unknown	BL40P-VS4	HP Insight Event Notifier	

Figure 3-15: HP Agent State

HP Hardware State

The status of key hardware components for individual HP ProLiant and HP Integrity servers can be viewed in the State pane of the HP Hardware table entry. The State Details pane lists all of the major hardware subsystem components and their associated conditions.

The major hardware subsystem components listed vary between individual system configurations and can include:

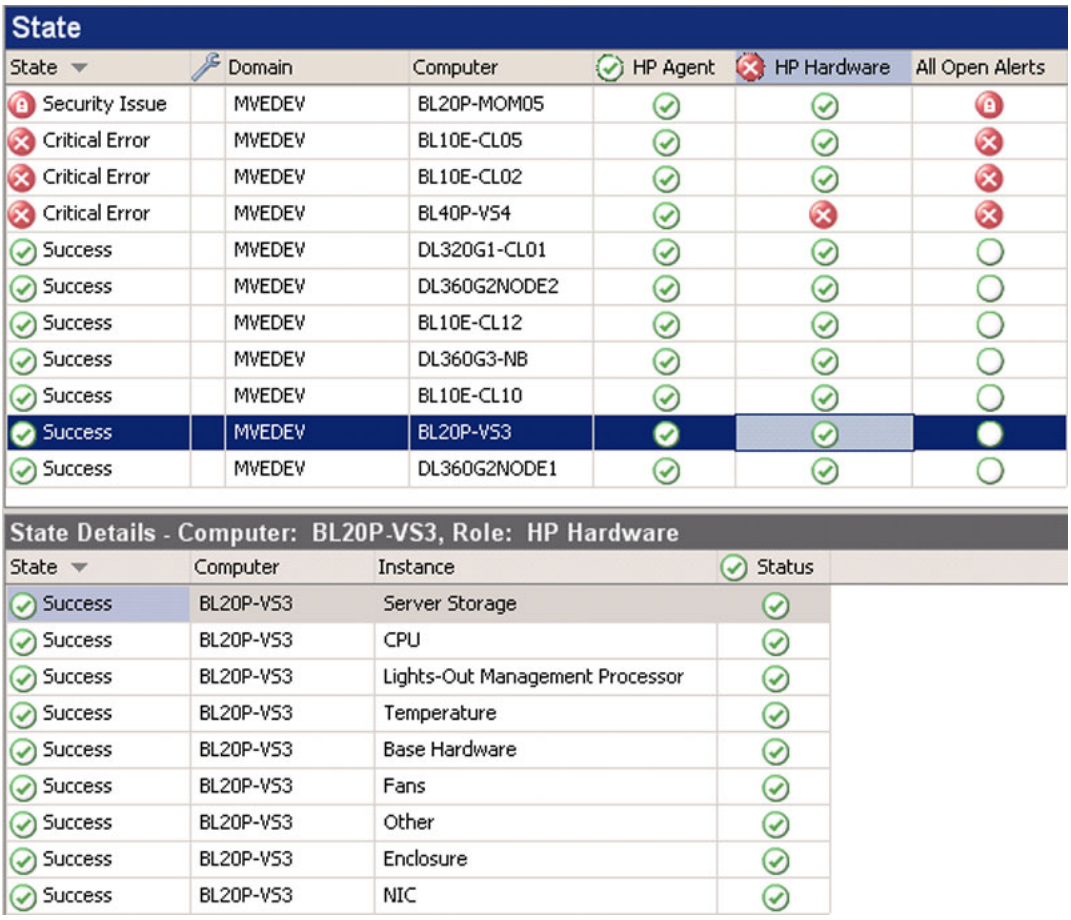
- Base Hardware—Standard server equipment
- Cluster—Cluster hardware component
- CPU—Aggregated CPU components

- Enclosure—Aggregated status for shared blade enclosure subsystems
- Fans—Aggregated fan components
- NIC—Network Interface Cards
- Power—Aggregated power supply components
- Lights-Out Management Processor—Lights-Out Management Processor in a ProLiant server
- Server Storage—Aggregated server storage
- Temperature—Aggregated server temperatures
- UPS—Uninterruptible Power Supply
- Other—All other components provided by HP management services, such as External Status and Performance state

NOTE: At this time, only the HP ProLiant Management Pack for MOM 2005 provides the state information for individual hardware components.

The hardware conditions available in the State pane translate as follows:

- Success—Hardware is in a normal state
- Warning—Hardware is in a degraded state
- Critical Error—Hardware is in a failed state
- Unknown—Unknown



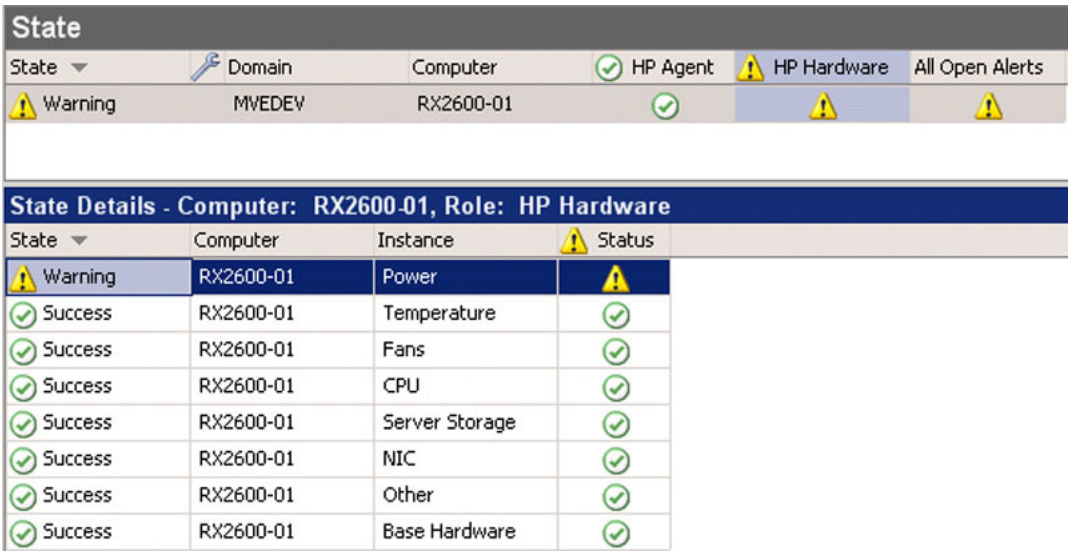
State

State	Domain	Computer	HP Agent	HP Hardware	All Open Alerts
Security Issue	MVEDEV	BL20P-MOM05			
Critical Error	MVEDEV	BL10E-CL05			
Critical Error	MVEDEV	BL10E-CL02			
Critical Error	MVEDEV	BL40P-VS4			
Success	MVEDEV	DL320G1-CL01			
Success	MVEDEV	DL360G2NODE2			
Success	MVEDEV	BL10E-CL12			
Success	MVEDEV	DL360G3-NB			
Success	MVEDEV	BL10E-CL10			
Success	MVEDEV	BL20P-VS3			
Success	MVEDEV	DL360G2NODE1			

State Details - Computer: BL20P-VS3, Role: HP Hardware

State	Computer	Instance	Status
Success	BL20P-VS3	Server Storage	
Success	BL20P-VS3	CPU	
Success	BL20P-VS3	Lights-Out Management Processor	
Success	BL20P-VS3	Temperature	
Success	BL20P-VS3	Base Hardware	
Success	BL20P-VS3	Fans	
Success	BL20P-VS3	Other	
Success	BL20P-VS3	Enclosure	
Success	BL20P-VS3	NIC	

Figure 3-16: HP Hardware State on an HP ProLiant server



State

State	Domain	Computer	HP Agent	HP Hardware	All Open Alerts
Warning	MVEDEV	RX2600-01			

State Details - Computer: RX2600-01, Role: HP Hardware

State	Computer	Instance	Status
Warning	RX2600-01	Power	
Success	RX2600-01	Temperature	
Success	RX2600-01	Fans	
Success	RX2600-01	CPU	
Success	RX2600-01	Server Storage	
Success	RX2600-01	NIC	
Success	RX2600-01	Other	
Success	RX2600-01	Base Hardware	

Figure 3-17: HP Hardware State on an HP Integrity server

For more in-depth information on the status of an HP ProLiant or Integrity server, administrators can refer to the HP System Management Homepage or HP SIM using the tasks provided with the HP Management Packs for ProLiant and Integrity servers. For more information on these Tasks, refer to the section, "Tasks for HP Servers."

Tasks for HP Servers

The HP Management Packs for ProLiant and Integrity servers include predefined tasks that can be used to access in depth server information, carry out advanced remote server administration, and perform life cycle management on multiple servers, clients, printers, and other networked devices. HP tasks are installed in MOM Administrator Console Tasks entry under the HP ProLiant Servers or HP Integrity Servers folders and are clearly displayed in the Tasks pane of the MOM Operator Console, as indicated in Figure 3-18.

The HP ProLiant Management Pack for MOM 2005 includes the following tasks:

- HP System Management Homepage
- HP Systems Insight Manager
- HP Lights-Out Management Processor
- Computer Model Discovery (located in the "Discovery" subfolder)

The HP Integrity Management Pack for MOM 2005 includes the following tasks:

- HP System Management Homepage
- HP Systems Insight Manager
- HP Management Processor

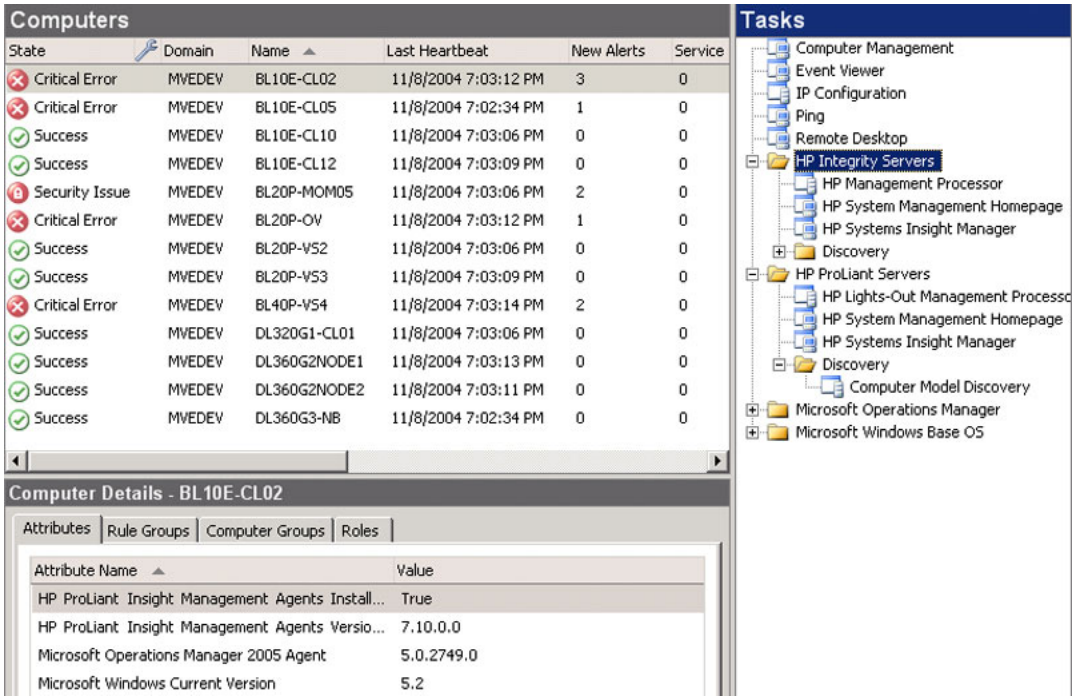


Figure 3-18: Tasks for HP servers

HP System Management Homepage Task

The HP System Management Homepage provides a consolidated view of system hardware health, configuration, performance, and status information for individual HP servers. The HP Management Packs for ProLiant and Integrity Servers both include a task to launch the HP System Management Homepage for an individual computer.

To launch the HP System Management Homepage task:

1. Open the MOM Operator Console.
2. Select **Public View.**
3. Select a computer from the Computers view under the HP ProLiant Servers folder or the HP Integrity Servers folder.
4. Select the **Tasks** button on the menu bar to display the Tasks pane.
5. In the **Tasks** pane, expand the HP ProLiant Servers folder or the HP Integrity Servers folder.
6. Select **HP System Management Homepage.** A new browser window opens.
7. Log in to the HP System Management Homepage.

IMPORTANT: The Web browser might display "Unable to complete your request due to added security features." Wait a few moments for a Security Alert dialog box, or select the **equivalent secure link** hyperlink. Select **Yes** from the Security Alert dialog box.

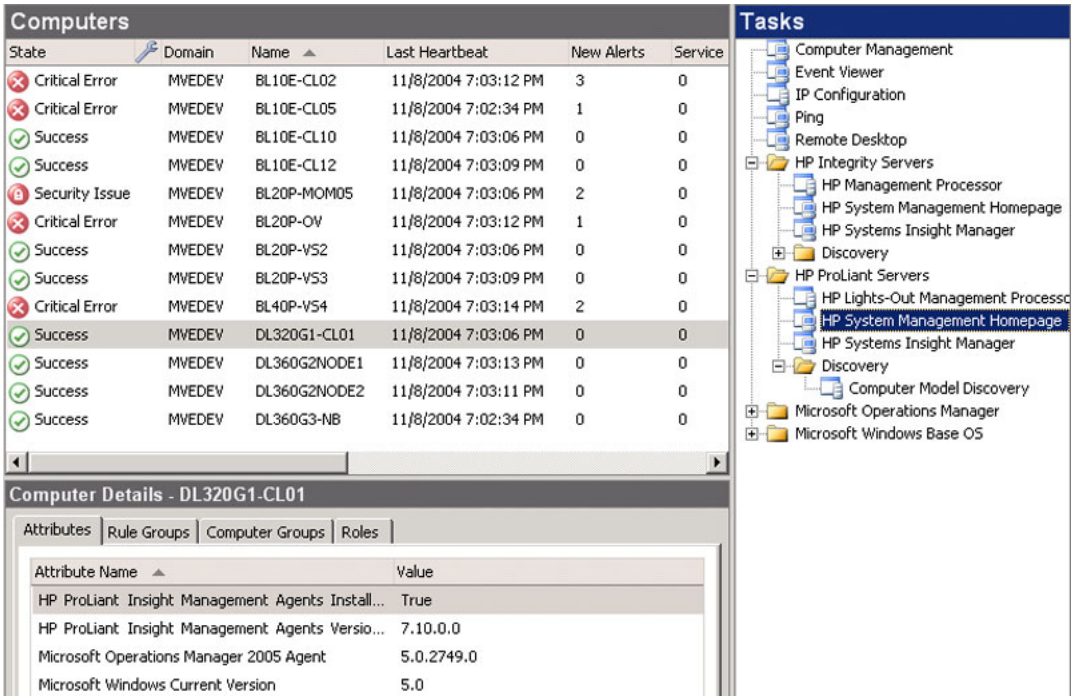


Figure 3-19: HP System Management Homepage

HP Systems Insight Manager Task

HP SIM provides comprehensive life cycle management for multiple hardware resources across a variety of operating platforms, including servers, clients, printers, and other networked devices. The HP Management Packs for ProLiant and Integrity Servers include a task to launch HP SIM on an identified host computer.

To launch the HP SIM task:

1. Open the MOM Operator Console.
2. Select **Public View.**
3. Select a computer from the Computers view under the HP ProLiant Servers folder or the HP Integrity Servers folder.
4. Select the **Tasks** button on the menu bar to display the Tasks pane.
5. In the **Tasks** pane, expand the HP ProLiant Servers folder or the HP Integrity Servers folder.
6. Select **HP Systems Insight Manager.** A new browser window opens.
7. Log in to HP SIM.

NOTE: Wait a few moments for a Security Alert dialog box to appear. Click **Yes** when the Security Alert dialog box appears.

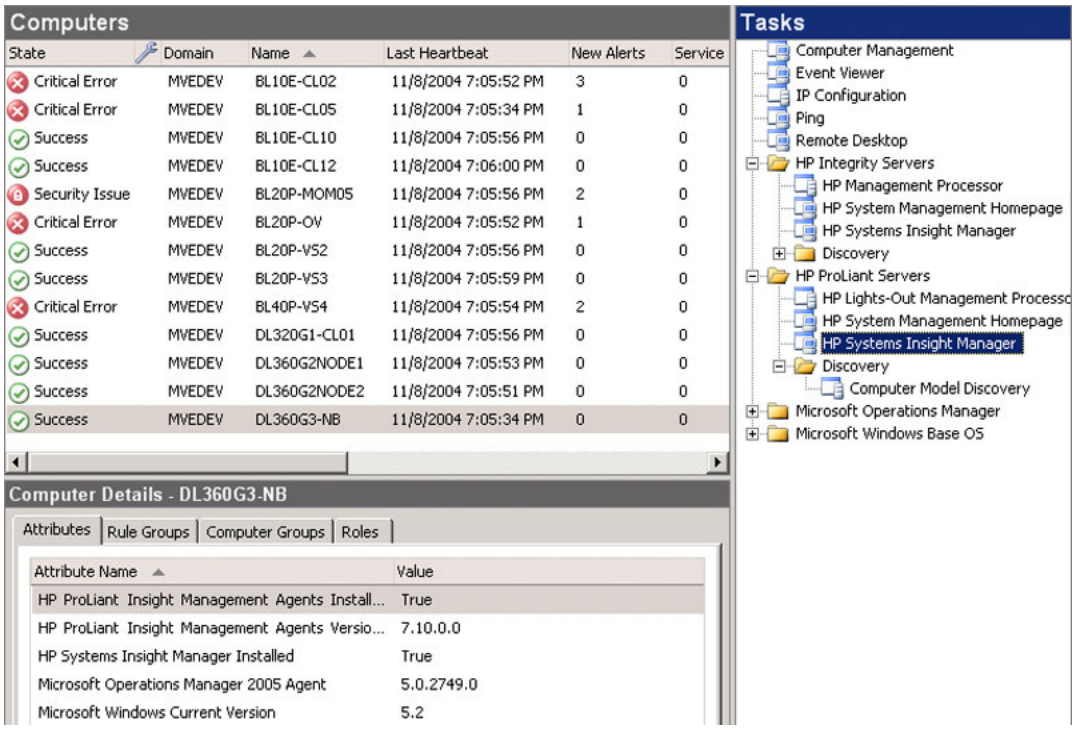


Figure 3-20: HP Systems Insight Manager Task

HP Lights-Out Management Processor Task

HP ProLiant servers might include a Lights-Out Management Processor, which enables administrators to perform for advanced secure and operating system-independent remote server management using a standard browser interface, irrespective of system state. The HP ProLiant Management Pack for MOM 2005 includes a task that collects HP Lights-Out Management Processor data and creates an associated browser link to remotely access the selected HP ProLiant server.

NOTE: The HP Lights-Out Management Processor task is only available in the HP ProLiant Management Pack for MOM 2005. The HP Management Processor task in the HP Integrity Management Pack for MOM 2005 displays similar information for HP Integrity servers (refer to the section, "HP Management Processor Task").

To launch the HP Lights-Out Management Processor task:

1. Open the MOM Operator Console.
2. Select **Public View.**
3. Select a computer from the Computers view under the HP ProLiant Servers folder.
4. Click the **Tasks** button on the menu bar to display the Tasks pane.
5. In the **Tasks** pane, expand the HP ProLiant Servers folder.
6. Select **HP Lights-Out Management Processor.** The Launch Task Wizard opens, as indicated in Figure 3-21.

7. Click **Next.**

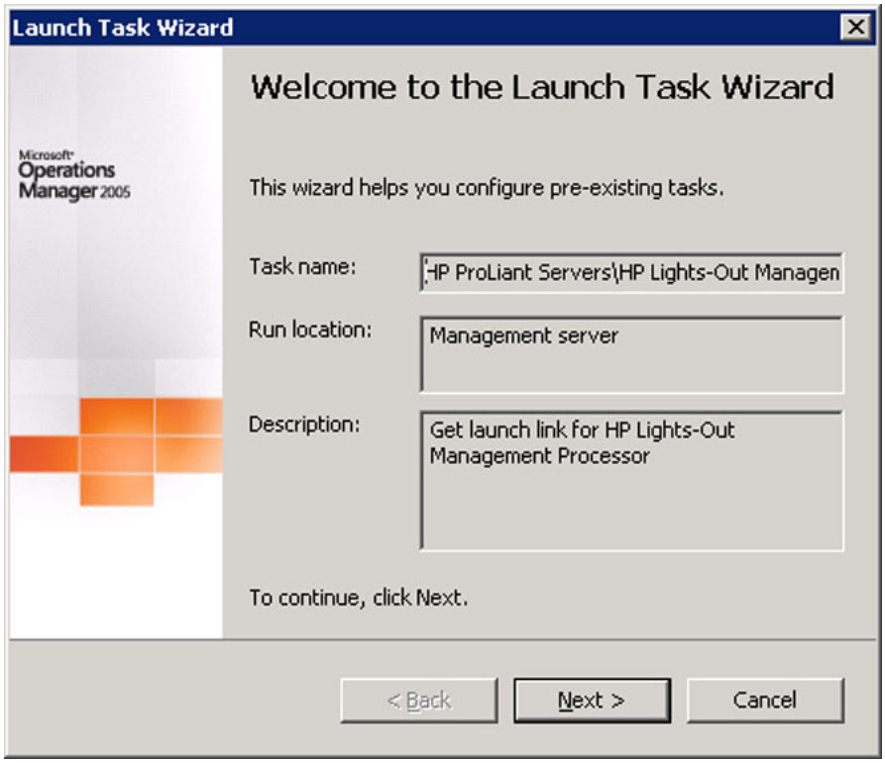


Figure 3-21: HP Lights-Out Management Processor task-Launch Task Wizard welcome

8. Click **Next** when prompted to edit the Command line task parameters. The default command line entry should not require editing.

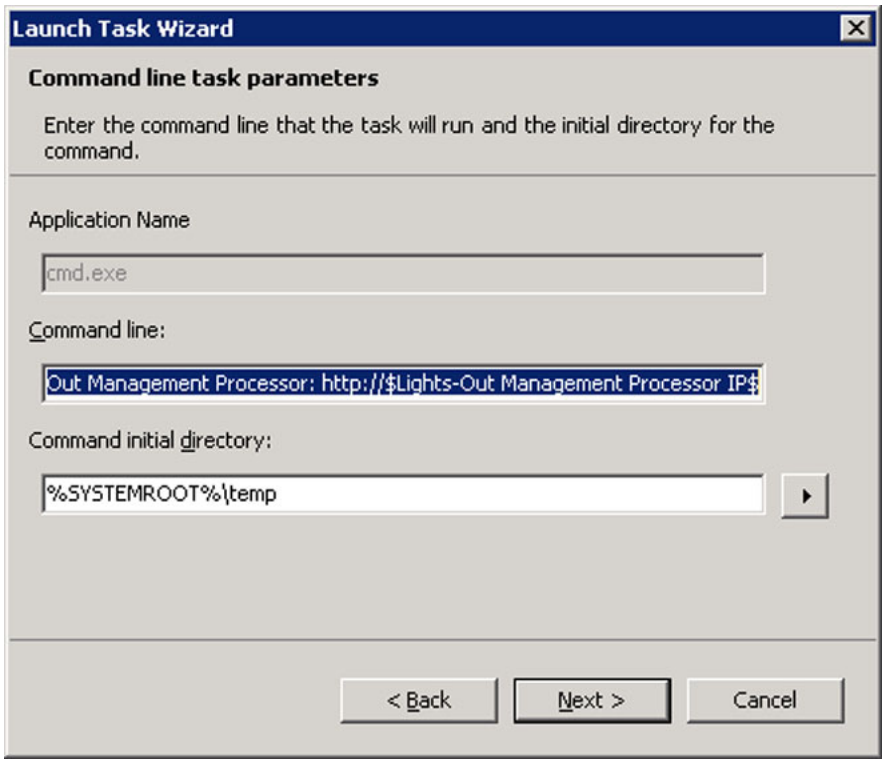


Figure 3-22: HP Lights-Out Management Processor task—Command line task parameters

9. Verify the computer listed in the Targets pane is the correct server, and click **Next.**

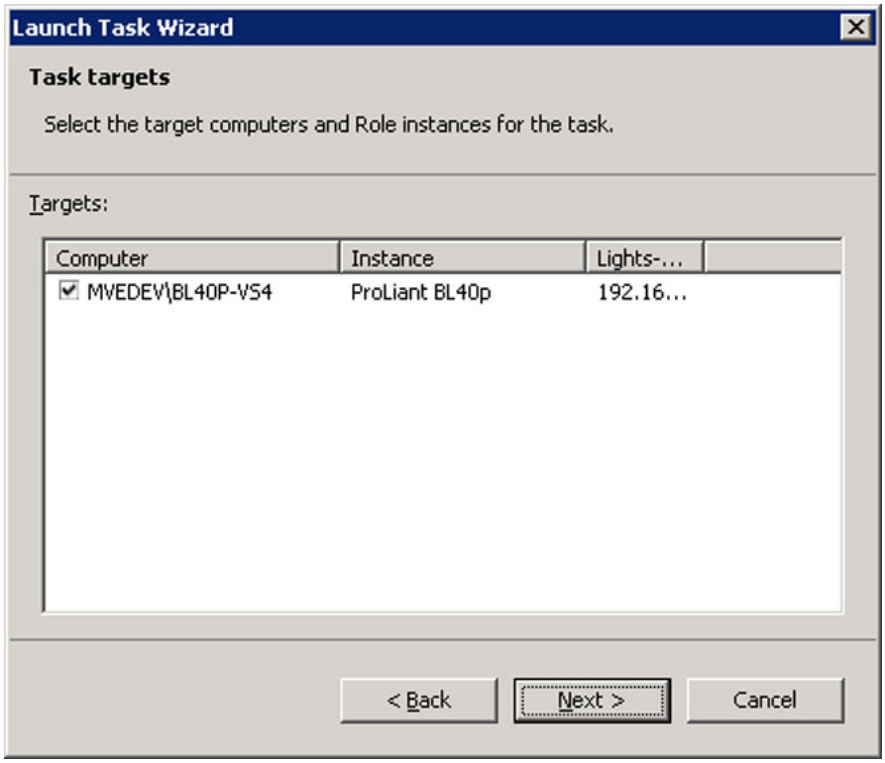


Figure 3-23: HP Lights-Out Management Processor task—Task targets

10. Click **Finish.**

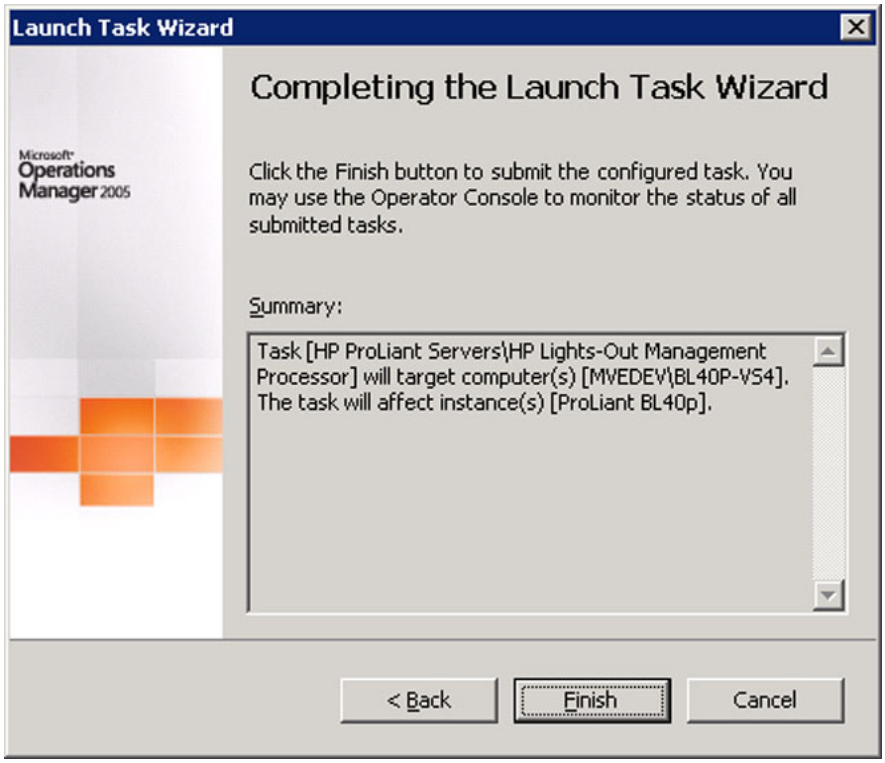


Figure 3-24: HP Lights-Out Management Processor task—Completing the Launch Task Wizard

11. Select **Task Status** under the HP ProLiant Servers folder from Public Views.
12. Locate and select the task launched.
13. Select the **Properties** tab of the Event Details pane.

14. Select the hyperlink to open a browser interface to the HP Lights-Out Management Processor on the associated ProLiant server.

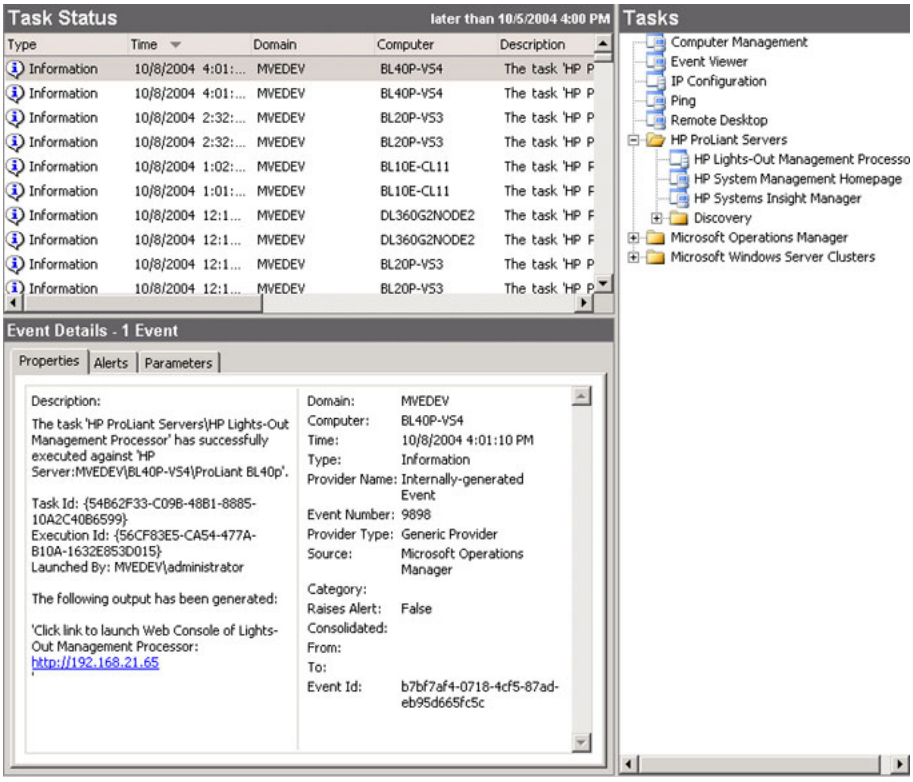


Figure 3-25: HP Lights-Out Management Processor task-Event Details

HP Management Processor Task

HP Integrity servers might include a Management Processor, which enables administrators to perform for advanced secure and operating system-independent remote server management using a standard browser interface, irrespective of system state. The HP Integrity Management Pack for MOM 2005 includes a task that collects HP Management Processor data and creates an associated browser link to remotely access the selected HP Integrity server.

NOTE: The HP Management Processor task is only available in the HP Integrity Management Pack for MOM 2005. The HP Lights-Out Management Processor task in the HP ProLiant Management Pack for MOM 2005 displays similar information for HP ProLiant servers (refer to the section, "HP Lights-Out Management Processor Task").

To launch the HP Management Processor task:

1. Open the MOM Operator Console.
2. Select **Public View.**
3. Select a computer from the Computers view under the HP Integrity Servers folder.

4. Click the **Tasks** button on the menu bar to display the Tasks pane.
5. In the **Tasks** pane, expand the HP Integrity Servers folder.
6. Select **HP Management Processor.** The Launch Task Wizard opens, as indicated in Figure 3-26.
7. Click **Next.**

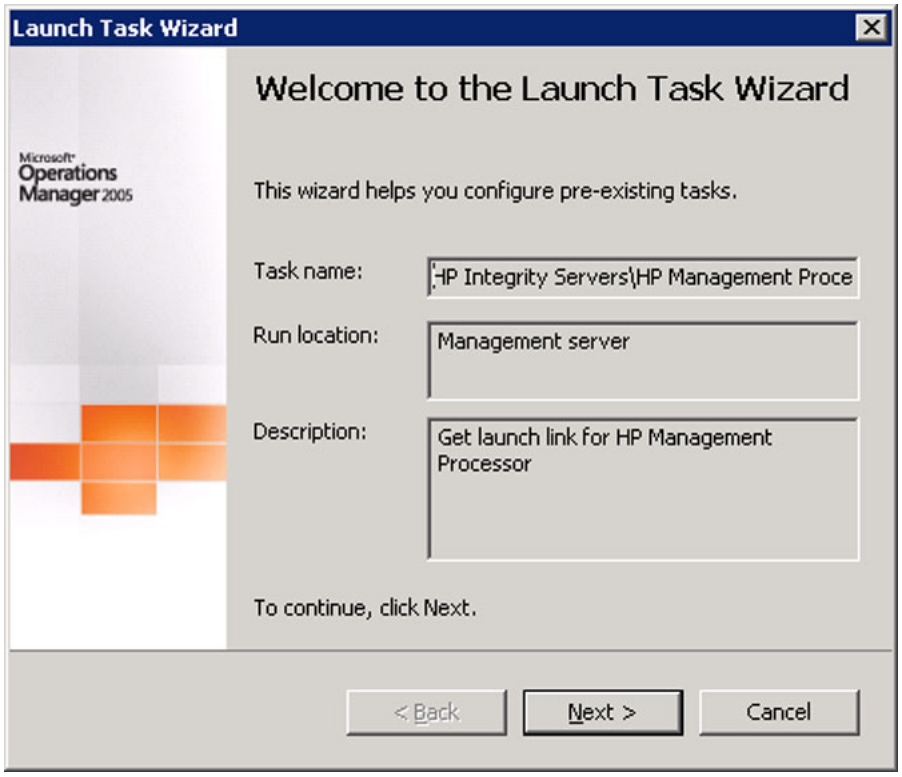


Figure 3-26: HP Management Processor task ~~L~~ aunch Task Wizard welcome

8. Click **Next** when prompted to edit the Command line task parameters. The default command line entry should not require editing.

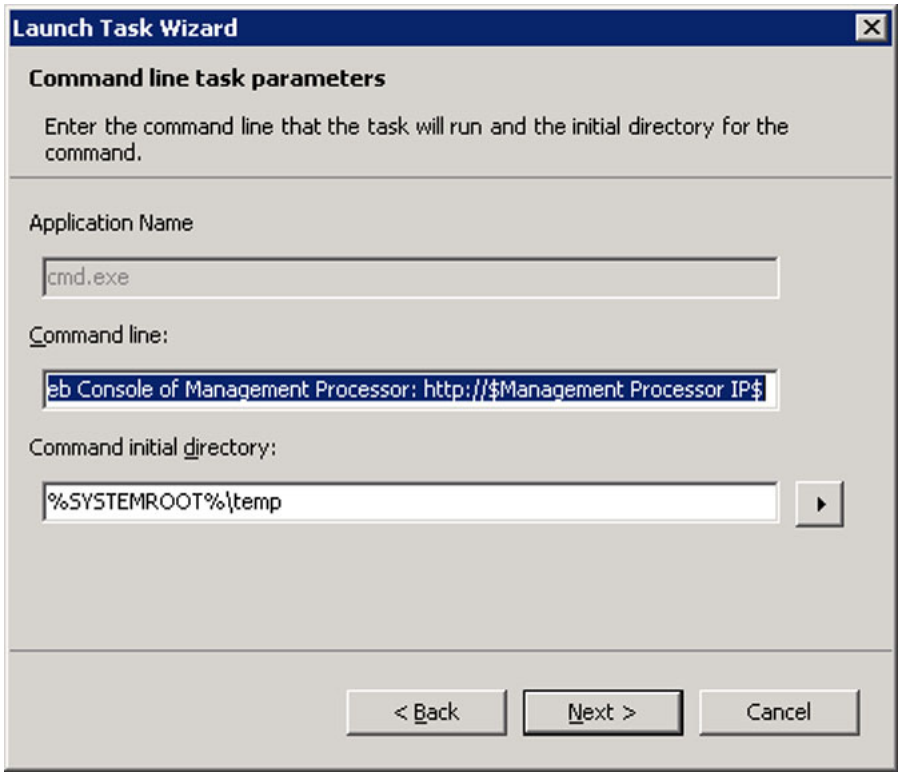


Figure 3-27: HP Management Processor task—Command line task parameters

9. Verify the computer listed in the Targets pane is the correct server, and click **Next.**

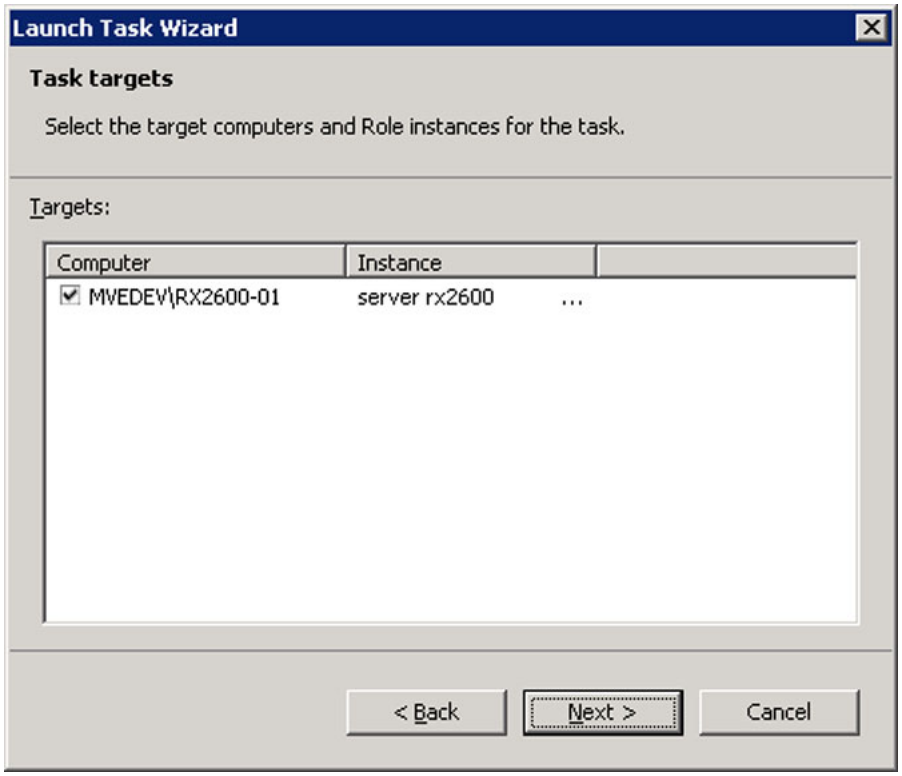


Figure 3-28: HP Management Processor task—Task targets

10. Click **Finish.**

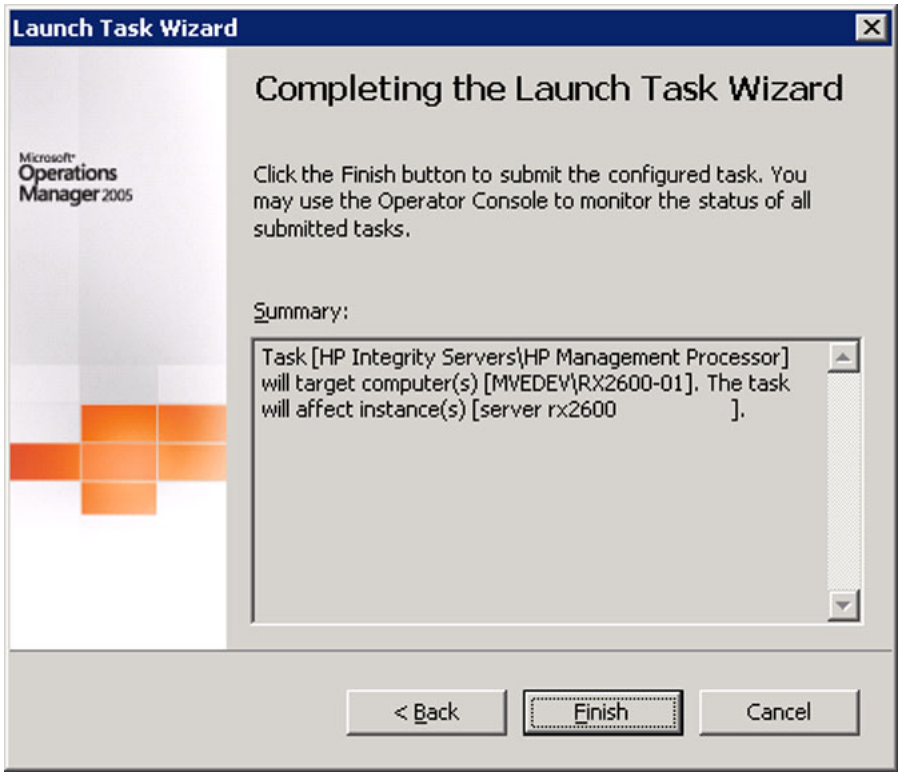


Figure 3-29: HP Management Processor task—Completing the Launch Task Wizard

11. Select **Task Status** under the HP Integrity Servers folder from Public Views.
12. Locate and select the task launched.
13. Select the **Properties** tab of the Event Details pane.
14. Select the hyperlink to open a browser interface to the HP Management Processor on the associated HP Integrity server.

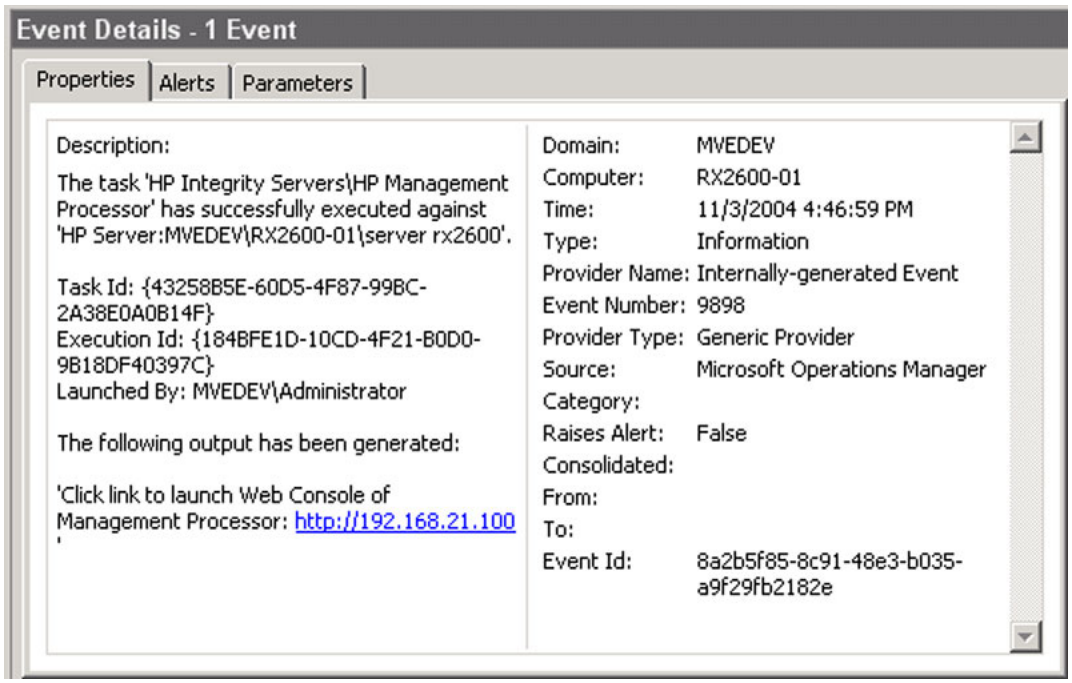


Figure 3-30: HP Management Processor task–Event Details

Discovery Tasks

The HP ProLiant Management Pack for MOM 2005 includes a task to manually discover and classify HP ProLiant servers. By default, computer discovery within MOM 2005 runs automatically on a predefined schedule. The HP Discovery task can be launched to manually identify and populate data for an individual server into its appropriate computer group outside of the regular MOM 2005 discovery schedule.

To launch the Discovery task:

1. Open the MOM Operator Console.
2. Select **Public View.**
3. Select a computer from the Computers view under the HP ProLiant Servers folder.
4. Click the **Tasks** button on the menu bar to display the Tasks pane.
5. In the **Tasks** pane, expand the HP ProLiant Servers folder.
6. Select **Discovery** to expand the contents, and then select **Service Discovery.** The Launch Task Wizard opens.

7. Click **Next.**

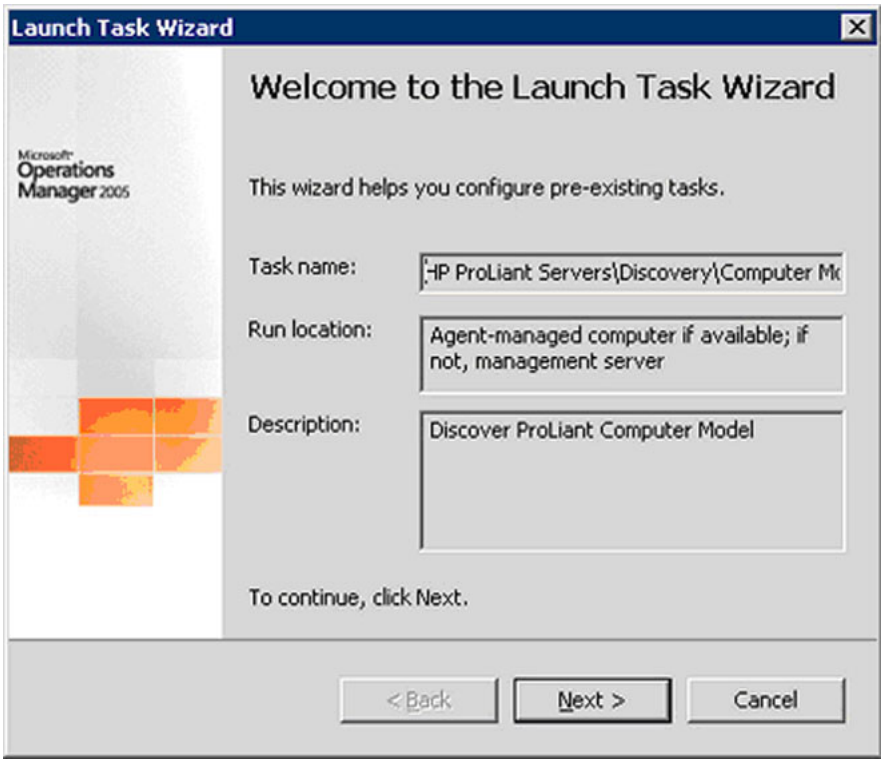


Figure 3-31: Discovery task—Launch Task Wizard welcome

8. Verify that the computer listed in Targets pane is the correct server, and click **Next.**

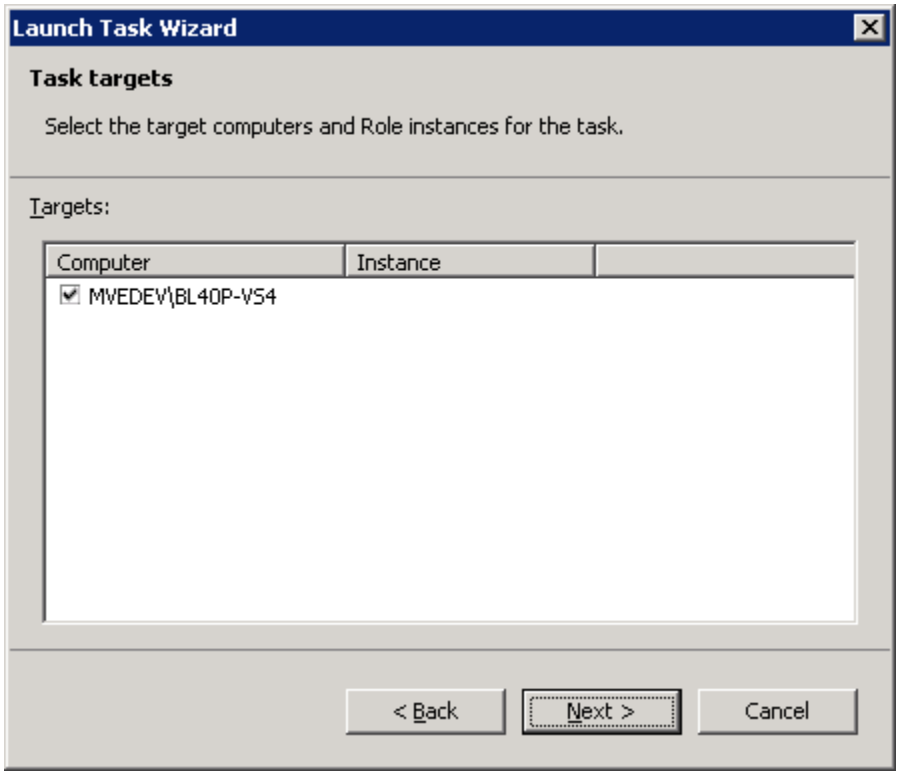


Figure 3-32: Discovery task—Task targets

9. Click **Finish** to perform the server discovery and populate the appropriate HP computer groups.

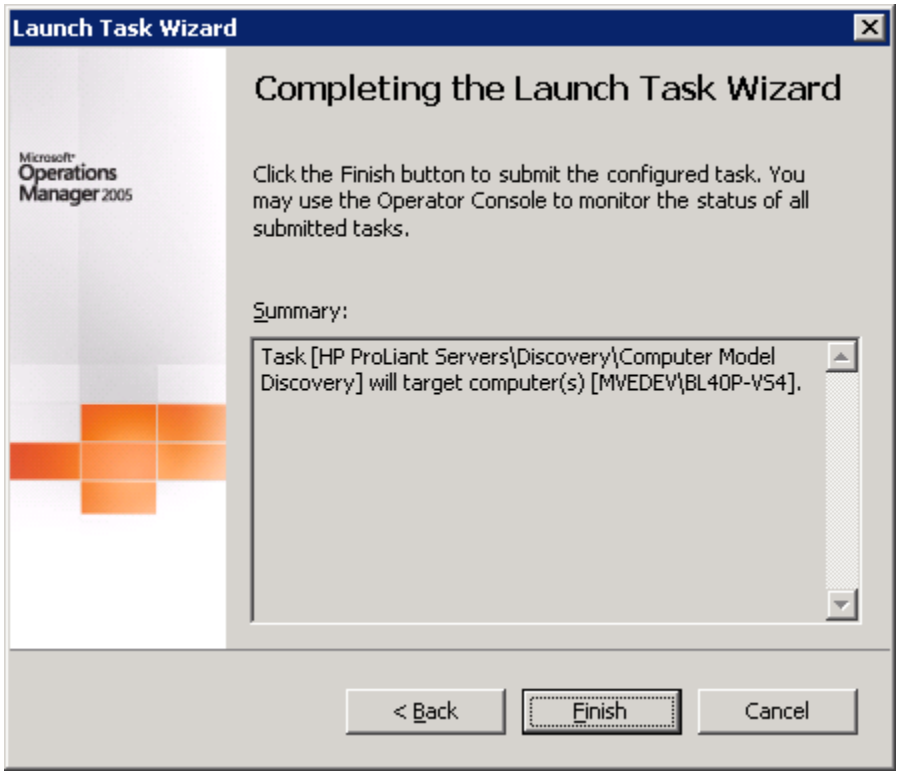


Figure 3-33: Discovery task—Completing the Launch Task Wizard

4

Troubleshooting

The following information is designed to help resolve some of the more common installation, setup, and operating problems that can occur when implementing the HP Management Packs for MOM 2005.

Troubleshooting Procedures

Before calling HP Support, review the following steps and collect the necessary system information to help expedite a resolution:

1. Review the list of questions and answers in this chapter.
2. Refer to the HP website for product updates at www.hp.com/servers/integration.
3. If your problem cannot be resolved by referring to the HP web site or this user guide, have the following information about your MOM environment available:
   - Microsoft Windows operating system version and patch levels
   - MOM version and appropriate update levels
   - Versions of Insight Management Agent as associated plug-in tools (such as Version Control Agents and Insight Diagnostics)
   - HP server type and models

NOTE: Running Microsoft Information utility msinfo32.exe on your MOM server or capturing server configuration details using HP Survey or Insight Diagnostic might also be useful in providing additional system details for more advanced analysis.

Frequently Asked Questions

Q. How do I remove the previous Compaq/HP Insight Management Pack for MOM 2000 from my MOM 2005 environment?

A. Refer to "Uninstalling the Insight Management Pack for MOM 2000" in Chapter 2 for instructions to completely remove the Insight Management Pack.

If the Insight Management Pack for MOM 2000 has been installed in a MOM 2005 environment, it must be removed before installing the HP Management Packs for ProLiant and Integrity servers.

Q. Why do I have Compaq and HP computer groups in the MOM Administrator and Operator Consoles that contain duplicate data?

A. This condition can occur if the HP IMP for MOM 2000 has been previously imported into MOM 2005 before installing the HP Management Packs for ProLiant and Integrity Servers. The HP Management Packs for ProLiant and Integrity servers have been specifically developed to take advantage of the redesigned architecture and new features provided with MOM 2005.

If the HP IMP for MOM 2000 has been installed in a MOM 2005 environment, it must be removed before installing the HP Management Packs for ProLiant and Integrity servers. Failure to do so might lead to duplicate event and group entries and inoperative functionality under MOM 2005. Refer to Chapter 2, "Uninstalling the Insight Management Pack for MOM 2000," for more information.

Q. Why are some elements of the HP Management Packs not visible?

A. Refresh the MOM Administrator Console interface to display any recent console tree updates. Some elements of the HP Management Packs may not be visible if the installation was interrupted or did not complete. Reinstall the HP Management Packs to correct this problem. Refer to the "Installing the HP Management Packs for MOM 2005" section in Chapter 2 for complete details on installing the HP Management Packs.

Q. Why is MOM 2005 not discovering my ProLiant or Integrity servers

A. ProLiant or Integrity servers might not be discovered by MOM 2005 for several reasons. Check the following conditions on all ProLiant and Integrity servers to be managed:

- The appropriate HP Management Pack has been installed.
- SNMP services are configured properly and running.
- HP Insight Management Agents are installed and active.
- The MOM Agent Manager has been configured to include the target HP servers as managed computers.
- WMI Core 1.5 is installed on managed servers running Windows NT 4.0.
- The default setting for automated daily scanning is 2:05 a.m. To discover systems immediately, use the Run Computer Discovery Now feature in the MOM 2005 Administrator Console.
- Confirm that MOM has the appropriate permissions to manage the target servers. On the MOM host server, examine the contents of the Application Log under the Windows Event Viewer for warning messages generated by the MOM Service.

Q. My ProLiant and Integrity servers are being discovered by MOM, but why are they not displayed in the computer groups provided with the HP Management Packs?

A. Be sure that HP Insight Management Agents for ProLiant or Integrity servers are installed and active on all HP servers being managed by MOM. The HP Management Packs support Insight Management Agents versions 5.50 to 7.10 for ProLiant servers, and versions 2.30 to 3.0 for Integrity servers. If the appropriate management agents are not installed, HP servers will not be displayed under the HP specific computer groups.

Q. Why are no HP events showing up as alerts under MOM 2005?

A. Assuming that the HP servers are included as managed computers under the MOM Agent Manager and are being discovered correctly, be sure that:

- SNMP services are properly configured and running on each managed HP server.
- All required Insight Management Agents are installed and active.
- Each managed HP server is receiving HP Insight events in the Windows Event Log.
- The Windows Event Log is not full. If the Windows Event Log is full, it might prevent new events from being recorded.
- The event processing rules provided with the HP Management Packs are installed and enabled within MOM 2005.

Q. Why do some HP events display in HP Systems Insight Manager but not in MOM?

A. HP Systems Insight Manager is designed to display SNMP traps and service events generated directly by the Insight Management Agents. By comparison, MOM uses the Windows Event Log to process event information. There are two primary causes for HP events not displaying within MOM:

- The event is not being written to the Windows Event Log. In general, only events that relate to hardware or service error conditions are written to the Windows Event Log. The majority of informational events and other events that do not require user action are not written to the Windows Event Log by the Insight Management Agents.
- If an HP event is being written to the Windows Event Log but does not display in MOM, it might not be associated with an enabled event processing rule or it might not match the processing rule criteria (refer to Appendix A and B for a list of events).

Q. Why does the Server Group Diagram not change after I click a different Diagram View group?

A. Moving the focus and refreshing the screen does not change the view of the Server Group Diagram. Use the MOM Administrator Scope dropdown menu to display the preferred view.

Q. **I added a new computer, but it does not display in the MOM Administrator Console.**

A. MOM 2005 periodically discovers new computers automatically. If a server is added to the network in between the scheduled discovery times then it might not display in the MOM Operator Console. In this scenario, new managed systems can be discovered manually by initiating Run Computer Discovery Now in the MOM Administrator Console. Refer to the MOM 2005 documentation for procedures on adding and discovering new computers.

Q. **Why do some icons in the State view have an empty green circle or state details not provided for HP state monitoring in the MOM Operator Console?**

A. HP state monitoring might display an empty green circle or no state details for several reasons:

- The HP agent state might indicate that a service is disabled. Refer to "State Monitoring for HP Servers" in Chapter 3.
- Allow 5 minutes for the state monitoring scripts to update the state view.
- Uninstalling and reinstalling MOM agents on the managed server can disrupt the relationship between the MOM 2005 server and the managed computer. To work around this, stop and restart the MOM service on the MOM 2005 server.

Q. **Why are the state details in the managed computer not visible after the proper agents are installed?**

A. Uninstalling and reinstalling MOM agents on the managed server might corrupt the relationship between the MOM 2005 serer managed computer agent. To restore the relationship, stop and restart the MOM service on the MOM 2005 server.

Q. Why can't I edit my company information in the MOM 2005 Administrator Console or Operator Console?

A. If MOM 2005 is installed in a Windows 2000 environment, Internet Explorer 5.5 with SP1 or later is required to provide the necessary edit capability under MOM 2005. Confirm that the required version of Internet Explorer is installed and configured.

A

Event Rules for HP ProLiant Servers

Base Hardware Events

Table A-1 lists the base hardware events and their descriptions.

Table A-1: Base Hardware Events

Windows Event ID	Event Description
1025	Memory degraded
1026	Memory degraded
1027	Memory degraded
1028	Memory degraded
1031	Memory degraded
1071	Memory degraded
1072	Memory error tracking disabled
1082	Temperature failed and system shutdown
1083	Temperature degraded
1085	Fan failed
1086	Fan degraded
1088	Fan failed
1103	Power sub-system degraded
1109	Remote Management Processor battery failed
1110	Remote Management Processor failed
1111	Remote Management Processor degraded
1112	Remote Management Processor battery connector degraded
1113	Remote Management Processor keyboard connector degraded
1114	Processor degraded
1115	Base system degraded

continued

Table A-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
1116	Remote Management Processor mouse connector degraded
1117	Remote Management Processor power connector degraded
1124	Power sub-system degraded
1125	Power sub-system failed
1126	Power sub-system degraded
1128	Power sub-system degraded
1129	Fan degraded
1130	Fan failed
1131	Fan degraded
1134	Temperature failed and system shutdown
1135	Temperature degraded
1137	DC-DC power converter degraded
1138	DC-DC power converter failed
1139	DC-DC power converters degraded
1142	PCI adapter failed
1147	Rack enclosure temperature failed
1148	Rack enclosure temperature degraded
1150	Rack fans failed
1151	Rack fans degraded
1155	Rack power supply failed
1156	Rack power supply degraded
1160	Rack power subsystem not redundant
1161	Rack power subsystem degraded
1162	Rack power subsystem degraded
1163	Rack server power subsystem degraded

continued

Table A-1: Base Hardware Events *continued*

Windows Event ID	Event Description
1164	Rack server power subsystem degraded
1165	Rack server power subsystem degraded
1166	Rack enclosure power subsystem degraded
1167	Rack enclosure power subsystem degraded
1169	Rack enclosure power subsystem degraded
1172	Rack enclosure power subsystem degraded
1173	Rack enclosure power subsystem degraded
1174	Rack enclosure power subsystem degraded
1175	Rack enclosure power subsystem degraded
1176	Rack power subsystem degraded
1177	Rack enclosure power subsystem degraded
1178	Rack enclosure power subsystem degraded

Cluster Hardware Events

Table A-2 lists the cluster hardware events and their descriptions.

Table A-2: Cluster Hardware Events

Windows Event ID	Event Description
1167	Cluster resource degraded
1168	Cluster resource failed
1169	Cluster network degraded
1170	Cluster network failed
1171	Cluster service degraded
1172	Cluster service failed

Network Interface Events

Table A-3 lists the network interface events and their descriptions.

Table A-3: Network Interface Events

Windows Event ID	Event Description
1281	Network Interface failed
1283	NIC Teaming failed
1285	Network Interface failed
1287	NIC Teaming failed

Server Storage Events

Table A-4 lists the server storage events and their descriptions.

Table A-4: Server Storage Events

Windows Event ID	Event Description
1061	Drive Array Physical Drive failed
1063	Drive Array Spare Drive failed
1064	Drive Array Physical Drive failed
1065	Drive Array Accelerator failed
1066	Drive Array Accelerator data failed
1067	Drive Array Accelerator battery failed
1075	Storage System Fan degraded
1076	Storage System Temperature failed
1077	Storage System Temperature degraded
1101	Storage System Side Panel degraded
1104	Storage System Fault Tolerant Power Supply degraded
1107	SCSI Tape Drive failed
1119	SCSI Tape Drive degraded
1120	SCSI Tape Drive degraded
1121	IDE Drive degraded
1145	External Array Logical Drive failed
1146	External Array Physical Drive failed
1147	External Array Spare Drive failed
1148	External Array Accelerator failed
1149	External Array Accelerator data failed
1061	Drive Array Physical Drive failed
1063	Drive Array Spare Drive failed
1064	Drive Array Physical Drive failed
1065	Drive Array Accelerator failed
1066	Drive Array Accelerator data failed
1067	Drive Array Accelerator battery failed

continued

Table A-4: Server Storage Events ***continued***

Windows Event ID	Event Description
1150	External Array Accelerator battery failed
1151	External Array Controller failed
1152	Storage System Fan degraded
1153	Storage System Power Supply degraded
1154	Storage System Power Supply UPS degraded
1155	Storage System Temperature degraded
1156	SCSI Tape Library failed
1158	SCSI Tape Library degraded
1159	SCSI Tape Library door degraded
1161	SCSI CD Library failed
1164	Drive Array Controller degraded
1165	Drive Array Controller degraded
1173	Fibre Channel Tape Controller
1174	Fibre Channel Tape Library degraded
1175	Fibre Channel Tape Library door degraded
1176	Fibre Channel Tape Drive degraded
1177	Fibre Channel Tape Drive degraded
1178	Fibre Channel Tape Drive degraded
1179	External Array Controller degraded
1180	Drive Array Tape Library degraded
1181	Drive Array Tape Library door degraded
1182	Drive Array Tape Drive degraded
1183	Drive Array Tape Drive degraded
1184	Drive Array Tape Drive degraded
1185	Fibre Channel Controller degraded
1186	IDE ATA Disk degraded

continued

Table A-4: Server Storage Events *continued*

Windows Event ID	Event Description
1187	ATA RAID Logical Drive degraded
1188	Storage System Fan degraded
1189	Storage System Temperature degraded
1190	Storage System Power Supply degraded
1193	External Tape Drive degraded
1194	External Tape Drive degraded
1195	External Tape Drive degraded
1196	Storage System Recovery Server degraded
1197	External Tape Library degraded
1198	External Tape Library door degraded
1199	Drive Array Controller degraded
1201	Drive Array Spare Drive degraded
1202	Drive Array Physical Drive degraded
1203	Drive Array Physical Drive degraded
1204	Drive Array Accelerator degraded
1205	Drive Array Accelerator data degraded
1206	Drive Array Accelerator battery failed
1207	Drive Array Tape Library degraded
1208	Drive Array Tape Library door degraded
1209	Drive Array Tape Drive degraded
1210	Drive Array Tape Drive degraded
1211	Drive Array Tape Drive degraded
1212	Storage System Fan degraded
1213	Storage System Temperature degraded
1214	Storage System Fault Tolerant Power Supply degraded
1215	Fibre Channel Controller degraded

B

Event Rules for HP Integrity Servers

Base Hardware Events

Table B-1 lists the base hardware events and their descriptions

Table B-1: Base Hardware Events

Windows Event ID	Event Description
4	A temperature inside the server has gone outside the factory-specified range
5	A temperature inside the server has gone far outside the factory-specified range
6	Temperature sensor crossed upper non-recoverable threshold
8	A measured voltage in the server has gone far outside the factory-specified lower voltage range
9	Voltage sensor crossed lower non-recoverable threshold
10	A measured voltage in the server has gone outside the factory-specified upper voltage range
12	Voltage sensor crossed upper non-recoverable threshold
26	The built-in sensors of the server have detected an open chassis door
62	Power supply subsystem redundancy lost
76	Hot swap cage: drive removed
113	Hot swap cage: SCSI cable removed
518	Uncorrectable multi-bit ECC error has occurred
699	Machine Check Initiated
700	Generic trap for Critical or Fatal type E0 event from system firmware
704	Voltage insufficient
705	Voltage reached critical level
706	Power Pod Voltage Fault
707	Voltage absent
710	Fan speed lags
720	Power supply failure

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
722	Power supply AC lost
726	Power failure in power supply
727	Power supply failed
728	Voltage reached critical level
729	System shutdown or reset caused by sensor reading
730	BMC firmware did not detect the system firmware boot
731	A/C power failed, disconnected, or out of range
732	Power supply sensors detect a possible problem
733	Cooling unit warning
734	Cooling unit failure
735	BMC entering special mode
736	Watchdog timer expired–Hard reset
737	Watchdog timer expired–Power-off
738	Watchdog timer expired–Power-cycle
739	Missing FRU device
740	Missing Entity
744	System event log almost full
745	TOC interrupt (crash dump)
746	INIT Initiated
747	PCI system error detected
748	Operating system run-time critical shutdown
749	ACPI state S5 (soft-off, entered by override)
750	Watchdog timer expired (no action)
751	PCI parity error detected
1035	This system has unsupported manageability firmware bundle installed

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
1036	BMC in this system is not operating normally
5001	Invalid operating system INIT checksum
5002	Bad operating system MCA checksum
5003	BMC interface to IPMI failed
5005	BMC port failure
5010	Boot cell launch EFI failure
5011	Monarch selection failure
5013	CPU monarch collision
5023	Boot cell virtualize EFI failure
5025	Boot cell virtualize PAL failure
5027	Boot cell virtualize SAL failure
5028	Boot cell virtualize SALPROC failure
5030	CPU struct init failed
5031	CPU failed early configuration
5033	CPU failed early self test
5034	CPU failed
5036	CPU failed late self test
5037	CPU not enough late test memory
5039	CPU deconfigured
5040	Could not allocate memory for EFI image
5041	EFI image corrupted
5042	EFI not in fit table
5045	NVRAM test fail
5048	EFI Rom size bad
5049	EFI Rom checksum error

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5050	External interruption nest limit exceeded
5051	External interrupt not serviced
5052	External interrupt taken
5053	Forward Progress Log (FPL) access failed
5054	PSR fetch failure
5055	Cell halt
5056	CPU PAL incompatible with CPU
5057	Slave is incompatible with monarch
5058	Interrupt clear failure
5059	System Event Log (SEL) access failed
5060	Trap taken
5063	LDB State bad on entry
5064	Interrupt with IC bit clear
5065	Min-state registration failure
5066	CPU mismatched boot type
5067	Boot monarch timed out
5069	PAL_B not in FIT table
5070	SAL_B not in FIT table
5073	NVRAM test fail
5076	Interrupt vector out of range
5077	Pal proc error getting pal copy info
5078	Pal proc error copying pal to memory
5079	Boot pal proc failure
5080	Console device failure
5081	Platform interface device failure

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5082	Platform scratch RAM test failed
5083	CPU rendezvous failure
5084	Error extracting sal_b from ROM
5085	Scratch RAM bad
5087	IPMI SEL is full
5091	Slave wake-up before vector registered
5092	CPU failed rendezvous handler
5098	Error building SMBIoperating system tables
5099	CPU starting boot
5100	Trap nest limit exceeded
5101	Trap not serviced
5102	Trap taken
5103	Uncleared interrupt
5104	Unexpected external interrupt
5105	Interrupt before redirection table set up
5106	CPU unexpected MCA
5107	Unexpected trap
5108	CPU unknown boot error
5118	CC errors PAL failure
5119	Expected MC vector unregistered
5120	Expected Machine Check
5121	INIT initiated
5123	Expected I/O host bridge is missing
5124	LBA has unexpected number of I/O slots
5125	I/O rope width does not match expected value

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5127	Found unexpected I/O host bridge
5130	PCI clock DLL error
5131	PCI hot plug controller failed
5132	Found unknown I/O rope width
5133	I/O LBA clear error failed
5136	I/O host bridge inaccessible because rope reset failed to complete
5137	Insufficient power to turn on PCI slot
5138	PCI bus walk unknown error
5139	PCI bus walk resources exceeded
5140	PCI bus unmap unknown error
5141	PCIXCAP sampling error
5142	Power monitor failed to respond
5143	I/O rope reset failed to complete
5144	I/O SBA clear error failed
5145	PCI slot has incorrect default power state
5146	PCI slot power on error
5147	PCI slot's standby power failed
5148	Found invalid PCIXCAP value
5149	Unsupported rope frequency
5150	Unsupported host bridge type
5151	MC during INIT
5152	Machine Check initiated
5154	MC handler was invoked to rendezvous
5155	Error in temporary mdt area
5156	Failed to find lmmio entry in mdt

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5157	Memory page zero bad
5158	Failed to find space in mdt
5159	Media failure: Information was not retrieved/logged
5160	Bus interface register test failed
5161	Memory ECC normal write/read test failed
5170	Memory DIMM distribution performance warning
5171	DIMM loading order error: DIMM unallocated
5172	DIMM SPD checksum failed
5173	DIMM SPD fatal error
5174	Unsupported memory DIMM type
5175	The DIMM type of this DIMM does not match with others in the DIMM group
5176	The DIMM type table is full; new DIMM type cannot be added
5179	DIMM number not found in DMT table
5180	Memory ECC multiple-bit data error detection failed
5181	Memory ECC multiple-bit ECC error signaling failed
5182	Memory ECC single-bit data error detection failed
5183	Memory ECC single-bit ECC error detection failed
5186	Memory address not found in MBAT
5187	Memory Error Information not cleared
5188	Memory error logs did not clear on first try
5189	Could not clear memory error logs
5190	Memory error clear failed
5191	DIMM loading order error: DIMM unallocated
5192	Memory test compare error in DIMM
5193	Generic memory firmware error

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5199	Memory interleaving algorithm failed
5202	Memory interleave generation failed
5204	Uncorrectable (multiple-bit) ECC error in DIMM
5205	Memory register test failed
5208	SPD found no memory DIMMs
5209	No memory found
5211	Cannot log memory error because PDT is disabled
5212	PDT is disabled
5214	Error adding entry to PDT
5215	Multi-bit error overwrote single-bit error in PDT
5216	Cannot add PDT entry--PDT full
5218	Memory platform data update failure
5219	Cannot find memory rank entry
5220	Memory configuration changed since last boot
5237	Memory error overflow:
5238	Memory forward progress code invalid
5243	Memory controller error status word is:
5244	Memory error status invalid
5245	Memory error summary bits invalid
5248	Unexpected machine check during memory code
5250	The DIMM distribution check was bypassed
5253	Looping on destructive memory tests
5255	DIMM Set Check has been skipped
5256	Serial Presence Detect (SPD) has been skipped
5257	An Alternate Memory Configuration has been loaded into the system

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5260	operating system INIT address not registered
5261	operating system INIT requested a warm boot
5263	operating system MCA address not registered
5264	operating system MCA did not correct the Machine Check
5265	CMC: PAL corrected the Machine Check
5266	Found bad miscellaneous register
5268	SAL_CHECK failed for an unknown reason
5269	CMC: SAL corrected the Machine Check
5270	SAL_INIT failed for an unknown reason
5277	MCA: Uncorrected Machine Check
5278	Unspecified memory interleave error
5279	Unexpected return to SAL_CHECK
5280	Unexpected return to SAL_INIT
5335	Firmware is adding a DEGRADED CPU node to the device tree
5354	PD rendez will fail do to a Firmware Tree error
5359	The current cell is not configured as part of the expected set
5360	A remote CSR could not be read
5361	The current cell is too late to rendezvous with other cells
5365	The current cell detected incompatible CPUs on another cell
5366	Current cell was too slow creating the local rendezvous set
5376	Reporting cell was not included in the global cell set
5380	No Core Cell can be selected in the PD
5383	Firmware was unable to notify utilities of the core cell number
5398	Negative 1 read from a CSR
5402	Fabric already owns the semaphore needed

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5403	Fabric code unable to find a needed service provider
5404	Error in a fabric port
5405	Parity error detected on read from fabric
5406	Error writing to fabric
5407	Crossbar slices are out of rev with each other
5408	Crossbar slices are configured poorly
5411	A CPU has taken over for the monarch CPU
5416	SRAM cannot be used on the cell
5417	The dillon hardware cannot be located
5418	A required piece of PDH bus hardware cannot be contacted
5419	Error: PCI buses are configured for multiple speeds
5420	The bus depth was exceeded during IO probing
5432	A Time-out occurred during RI initialization; the CSR is in the data field; the alert level will vary
5438	SuperIO has been detected in slot
5439	The LBA discovered has been deconfigured
5440	I/O link software error was corrected
5441	Bad parity data from RD Rtn FIFO on PIO Read (UNC)
5442	Parity error in Reg FIFO Internal parity error
5443	TLB Fetch time-out
5444	Link presence goes away, FE
5445	Elroy to REO parity error on command; rope will go fatal
5446	Access to invalid TLB entry Requesting rope fatal
5447	Memory fetch time-out
5448	Error was encountered when initializing the LBA
5449	LBA correctable Time-out Error was encountered

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5450	LBA uncorrectable Function Error was encountered
5451	LBA uncorrectable Time-out Error was encountered
5452	Misc uncorrectable error discovered on LBA
5453	LBA encountered an uncorrectable parity error
5454	LBA Misc Fatal Error encountered
5455	LBA Fatal function error encountered
5456	LBA Fatal Parity error encountered
5457	LBA Fatal time-out error encountered
5458	Miscellaneous Uncorrectable Error encountered
5459	Miscellaneous fatal error discovered on PCI card
5463	A single bit memory error (SBE) was detected
5464	DIMM SPD Extended Checksum Failure
5465	DIMM is software unallocated
5466	The DIMM has been hardware unallocated
5467	Options header checksum error encountered
5468	Options data checksum error was encountered
5473	Internal inconsistency in the interleave tables
5474	CellInfoList is not NULL
5478	Error in constructing the Memory Descriptor
5479	Unable to update the local memory layout
5483	A required address was not found within a mapped address
5485	Failure to install a Partition level PDT
5490	A critical resource could not be found or is unusable
5491	Internal firmware programming error
5492	NVRAM test failed with a data compare error

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5493	An NVRAM CRC Error was detected
5496	A semaphore could not be obtained
5498	The BLOCK requested in NVRAM has the wrong revision
5499	The requested NVRAM block was not found
5500	The requested NVRAM block is locked
5501	Firmware tried to unlock a NVRAM block that was already unlocked
5502	The Header in NVRAM was not found
5503	The Freelist used for NVM block allocation is corrupt
5505	Firmware is preparing to reset for reconfiguration
5507	An error was encountered communicating with utilities during PD rendez
5509	Forward progress is stopping, the cell or system will not boot further
5510	No console is available for the DUI to use
5511	Error processing encountered an unrecoverable error
5512	The scope of the ERM (Error Response Mode) is being reported
5513	The ERM (Error Response Mode) error string is being reported
5514	System is unable to complete the reset for reconfiguration request
5515	The cell is not able to reach all requested cells through the fabric
5518	LBA has unexpected number of I/O slots
5521	Console device failed to connect
5524	Error loading EFI driver
5525	Copying memory test code failed
5527	A remote cell is in an unknown state of PD rendezvous
5528	Multiple core cells have been discovered in the same PD
5529	The utilities component encountered an error when sending a command to the MP
5530	Error received after issuing the retrieve cell slot state command

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5531	The MCA was taken due to an uncorrectable error
5532	The MCA was caused by a fatal error
5533	The cause of the MCA is not known
5534	The action of logging the processor errors in the MCA path
5535	The progress in logging the concorde log(platform specific)
5536	The clearing of the concorde errors
5537	The event of logging the SBA errors
5538	The event of clearing the REO errors
5539	The event of logging the TOGO error information
5540	The clearing of the TOGO errors during the MCA path
5541	The CPU missed the MCAed CPU rendezvous at the cell level
5542	The event of the rendezvous of the machine checked CPUs
5543	The CPU is too late for the rendezvous of INIT CPUs
5544	The cell level rendezvous of the INIT CPUs
5545	The event of selecting the monarch CPU in the cell
5546	All the CPUs in the cell did not rendezvous during the MCA
5547	No access to the PD
5548	The loss of lockstep during the MCA path
5549	The event of rendezvousing all the cells in the PD level
5550	The PD level cell rendezvous failed
5551	The event of plunging the REO caches
5552	The event of flushing the CPUs
5553	The event of clearing the pending MCAs
5554	The event of logging the error to the NVRAM
5555	A time-out has occurred in one of the rendezvous phase

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5556	Diagnosis of catastrophic errors in the PIN block of concorde
5557	The cell monarch CPU has failed
5558	The cell missed the rendezvous at the partition level
5559	The PD monarch timed out
5560	SetViewRoot on a remote cell failed
5563	The cause of the INIT is not known
5566	Failed to update CSR contents
5567	Collecting the Complex profile information failed
5568	This chassis code indicates the failure in collecting the cell information
5569	Updating the GNI information of the cell with CLM failed
5570	Adjusting the memory information with Minimum ZI req failed
5572	Complex Profile A has a checksum error
5573	A Checksum error was encountered in the dynamic profile
5574	A checksum error occurred on the Partition Profile
5575	The Stable Complex Profile Sequence ID is invalid
5577	The Stable Complex Profile Sequence ID is invalid
5578	The Partition Profile Sequence ID is invalid
5579	Internal Firmware Programming Error from the EFI portion of the firmware
5580	The PD numbers in Group A and Group C of the complex profile are inconsistent
5581	The PD number specified in the complex profile is out of range
5583	Could not obtain the crossbar port semaphore
5584	Could not release the crossbar port semaphore
5594	BMC token upload failure
5595	NVM token access failure
5596	BMC token download failure

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5597	Error Writing BMC first boot token
5598	FRU ID read error
5599	FRU ID checksum error
5600	FRU ID version error
5601	Rom revision not equal to FIT revision
5602	ROM revision not equal to Rev block
5603	Primary Fit bad
5604	Secondary Fit bad
5605	PAL A execution ROM warning
5606	PAL B execution ROM warning
5607	An error was encountered when firmware tried to update the Group B Profile
5617	PCI parity error detected
5618	PCI system error detected
5619	I/O host bridge is deconfigured
5621	Firmware was unable to publish the Partition Profile
5622	The reporting cell is not configured to be in a PD
5623	DIMM thermal loading order warning
5624	The complex profile is not the same on all cells in the PD
5626	The PD cannot boot, a majority of cells did not arrive at Rendezvous
5630	The cause of the INIT is a crash dump
5631	MCA rendezvous is the reason for the INIT
5632	SAL_INIT Monarch LID
5634	INIT: Logging Processor State
5636	INIT: Rendezvous requested by operating system
5637	INIT: Monarch sending slaves to rendezvous

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5638	INIT: Monarch failed in slave rendezvous
5639	INIT: Monarch succeeded in slave rendezvous
5640	INIT: INIT timestamp
5641	Processor bus check
5642	Processor cache check
5643	SAL_CHECK monarch LID
5644	Processor IIP
5645	SAL_CHECK initialized store
5646	MC: I/O error log/clear error
5647	Processor IPSR
5648	MC: Logging I/O CEC
5649	MC: Logging memory CEC
5650	MC: Logging processor state
5651	Processor Mod Err Information Precise IP
5652	Processor Mod Err Information requestor ID
5653	Processor Mod Err Information responder ID
5654	Processor Mod Err Information target ID
5655	MC: MCA to BERR escalation not supported by PAL
5656	MC: MCA to BINIT escalation not supported by PAL
5657	MC: Get PAL features failed
5658	MC: Previous PAL rendezvous failed; rebooting
5659	MC: Set PAL features failed
5660	PCI bus error CMD
5661	PCI bus error status
5662	PCI bus error type

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5663	PCI bus error ID
5664	PCI bus requestor ID
5665	PCI bus responder ID
5666	PCI bus target ID
5667	Pluto error first
5668	Pluto error overflow
5669	Pluto error status
5670	I/O rope number
5671	Pluto Rope_N_Error
5672	MC: Post process platform log
5673	Processor PSP
5675	MC: Rendezvous requested by operating system
5676	MC: Monarch sending slaves to rendezvous
5677	MC: Monarch failed in slave rendezvous
5678	MC: Monarch succeeded in slave rendezvous
5679	MC_RENDEZVOUS: Rendezvous vector out of range
5680	Processor entering MC_RENDEZVOUS
5681	Processor leaving MC_RENDEZVOUS
5682	MC_RENDEZVOUS: No MC monarch
5683	MC_RENDEZVOUS: No wakeup registered
5684	MC_RENDEZVOUS: MCA escalation not supported by PAL
5685	MC_RENDEZVOUS: Get PAL features failed
5686	MC_RENDEZVOUS: Set PAL features failed
5688	MC: MC timestamp
5689	Processor TLB check

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5690	Processor micro arch check
5692	Internal Firmware Programming Error from the EFI portion of the firmware
5693	Multiple memory errors detected, starting retest
5694	Transient SBE promoted to permanent SBE in PDT
5695	Transient SBE aged out of the PDT
5696	Memory extender loading order error
5698	Inconsistency in the length of the ESI table
5699	Expected length ESI Table
5700	The computed checksum for ESI Table incorrect
5701	ESI Table contains an unsupported entry type
5702	First half of GUID data
5703	Second half of a GUID data
5704	A GUID was larger than the expected 128 bits
5705	Source file line number within EFI code base
5706	First half of an EFI source filename
5707	Second half of an EFI source filename
5708	EFI is halting
5711	Chip spare not supported on quad
5712	EFI internal error detected resulting in execution of ASSERT macro
5713	EFI has executed the "break" shell command
5714	EFI USB HCD interrupt service has detected the host controller is hung
5715	The EFI/SAL hand off structure version does not match EFI expectations
5716	EFIs expected value for the EFI/SAL hand off structure
5717	Unable to obtain access to all RTC SAL services
5718	Unable to obtain access to all SAL timer services

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5719	EFI unable to start the periodic timer
5720	No I/O port space region found in the MDT
5721	EFI reached an unimplemented section of code
5722	EFI unable to read current speedy boot settings
5723	Unpermitted SAL callback attempted
5724	EFI unable to determine frequency base of the CPU interval timer
5725	EFI system events already initialized
5726	Unable to create internal virtualization event while initializing IPMI events
5728	There was an error creating or initializing the FPGA node in firmware
5729	Error creating the PDH ioconfig node or attaching the service to it
5730	Error encountered setting up the dillon_pdh node or service
5731	The PDH component encountered an error dealing with a property on a node
5732	Error creating the acpi_hw node
5733	Error encountered creating or initializing the IPMI node
5734	Some processors not compatible
5735	Caches sizes are inconsistent
5736	Processor steppings are not equal
5737	Selecting new monarch
5738	Monarch not lowest stepping
5740	Processors are over clocked
5741	CPU access error on processor information area
5742	PAL A was not executed–HA LT
5743	PAL B was not executed–HA LT
5744	Prototype CPU installed
5745	Final boot rendezvous monarch watchdog time-out

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5746	Supplemental CPU tests generated an unexpected result
5747	A multi-bit error was found while reading a XBC CSR
5748	After reading a XBC CSR, the two slices read were different
5749	The return value from a function was an unknown value
5750	Cannot get system ID status from BMC
5751	Cannot read a system ID
5752	Failed to write new system ID, BMC reported an error
5753	The system IDs currently in the system are invalid
5754	One or more invalid system ID has been corrected
5755	EFI unable to find the SAL services for installing interrupt handlers
5756	EFI unable to find the SAL service to install run-time interrupt handlers
5757	EFI unable to find the SAL services for installing interrupt handlers
5758	EFI unable to find the SAL service to install boot-time interrupt handlers
5760	Too many parameters were passed to the utilities system
5762	A crossbar port is unexpectedly not present
5763	A crossbar port unexpectedly has its HW_LINK_OK bit not set
5764	A connected port was found to be in FE
5766	An error occurred while initializing the Concorde-XBC interface
5767	The CC→XBC l ink failed to initialize
5768	Unable to determine system mode because EFI/SAL interface not initialized
5769	BMC returned an invalid system mode
5770	EFI unable to specify system mode because EFI/SAL interface not initialized
5771	Unable to enter normal system mode because EFI/SAL interface not initialized
5772	Unable to initialize part of the SAL/EFI interface
5774	An expected tree node was not found

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
5776	EFI unable to modify system state to "running"
5777	/options settings for CPUBusConfigValue are not compatible with PAL
5778	The Get Processor Bus Dependent Configuration Features PAL call failed
5779	Memory DIMM pair mismatch
5782	A cell attempted to landmine the XBC-CC port of a different cell
5784	EFI unable to initialize internal library
5785	EFI unable to initialize security system
5786	EFI detected invalid internal privilege level
5787	EFI detected invalid privilege level when setting password
5788	EFI MDT table is bad
5789	Setting core frequency to lowest installed CPU
5790	Processor has incompatible fixed core ratio
5791	All processors slated for compatibility deconfiguration
5793	An unexpected or invalid value was read from a crossbar remote route table
5794	Error reading the PORT[n]_NEIGHBOR_INFORMATION XBC CSR
5795	Memory DIMM quad mismatch
5796	Firmware detected excessive errors on the DIMM
5797	The OE (output enable) bit was not set for a XBC port
5798	An error occurred while trying to read the PORT_STATUS CSR for a XBC port
5799	A XBC port was unexpectedly found to be land mined
5800	CPUs running at different speeds were detected during rendezvous
5802	The link between the local CC and the local XBC is unexpectedly not initialized
5803	An invalid XBC number was given
5804	An invalid XBC port number was given
5805	A bad parameter was passed to the LED function in the utilities component

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
5806	An unexpected neighbor type was read from a XBC PORT_NEIGHBOR_INFORMATION CSR
5807	A given XBC port is not a valid XBC-CC port
5808	A XBC port was unexpectedly found to be an invalid XBC-XBC port
5809	The XBC neighbor chip number does not match the expected value for this topology
5810	The XBC neighbor port number does not match the expected value for this topology
5811	Write through to BMC token failed
5812	Utilities reported an error while trying to manipulate the LED
5813	Duplicate CPU Ids were detected within a cell
5823	operating system crash dump started (D700)
5824	operating system legacy PA hex fault code (BThe)
5825	operating system dump status (EFxx)
5827	Setting processor response time-out failed
5831	Unallocated page 0 PDT entries were demoted
5832	Unable to validate blank password during EFI security initialization
5833	Unable to enter Guest mode during EFI security initialization
5834	Unable to increase privilege during EFI security initialization
5835	EFI assuming privilege level after BMC failure
5836	EFI unable to write privilege level during security initialization
5837	EFI was denied permission to write the privilege level during security init
5853	operating system dump, error writing image area to disk (E055)
5896	Coherency controller (CC) registers indicate a Deadlock Recovery Reset
6074	A DIMM loading order error has occurred
6146	Refresh Control Error Time-out
6180	Memory extender/baseboard FRU mismatch
6730	Fabric topology mismatch with XBCs in complex

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
6795	An invalid XBC to XBC port was found
7652	Could not get neighbor information
7653	The XBCs routing state was marked as in ERROR
7655	It indicates that there is no NVM error space left for logging an Error Event
7657	An XBC port found to have an unexpected error
7658	A XBC port route around has occurred
7660	During routing a crossbar is found to be in an unexpected routing state
7661	An unexpected XBC forward progress state was continually found until timing out
7663	During remote routing, the neighbor of the current port is not healthy
7664	The CC to XBC link is not viable
7666	Remote routing a crossbar failed
7667	Too many XBC-to-XBC were broken in the complex
7669	This cell did not get the XBC Global Semaphore
7671	Attempted an XBC SM4 takeover and timed out trying to unlock the SM4
7673	Waiting for the XBC Global Semaphore has timed out
7674	A time-out occurred while attempting to release the XBC semaphore
7682	Management Processor Firmware Self test Result
7683	Management Processor Firmware Soft Reset occurred
7684	Management Processor Firmware Battery Failure or NVRAM change
7685	Management Processor Firmware Software Error
7686	Management Processor detected an I2C Communication Error with BMC
7687	Management Processor Firmware CE Text Entry
7690	A CRC error was discovered when verifying the ROM
7718	(HWE) IO backplane type unknown
7732	CPU Revisions did not match

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
7733	Two CPUs are running at mismatched frequencies
7734	A CPU is being over clocked
7755	CLU firmware is not at proper revision level
7758	Copy of complex profile on sub and cells do not match
7759	MP reset button was pressed
7760	Duplicate cabinet number detected
7767	MP ID command must be run
7771	MP Battery is low
7772	Unsupported event received by the MP (Event Type not equal to OxE0 or 0x02)
7773	Partition being reset due to watchdog time-out expiring
7774	PDHC FW was reset by hardware due to firmware inactivity
7775	The CIO FW is not supported with this version of the MP
7776	The PM firmware version is not supported with this version of MP firmware
7781	Power-up aborted; over temp
7782	Too Few Bulk Power Supplies Available
7783	No Cabinet Start, Insufficient Blowers
7784	No Cabinet Start, Insufficient IO Fans
7785	AC power to the PDCA was detected, data Byte 3 specifies PDCA number
7786	AC power to the PDCA was removed, data Byte 3 specifies PDCA number
7787	Cabinet Blower Installed
7788	Cabinet Blower Removed
7789	Blower Speed High
7791	Cabinet Main Blower Failed
7793	48-V Converter Failed; data Byte 3 specifies PDCA number
7795	Fan failed in designated Bulk Power Supply

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
7796	One side converter Over Temp
7798	Bulk Power Supplies are not Redundant
7799	+48 V DC has exceeded its upper limit
7803	+48 V DC has fallen below its lower limit
7806	Cabinet Fan Failed
7808	Cabinet Power Turned Off By Command
7818	Front EMI Shield has been removed
7822	Housekeeping power has exceeded expected levels
7823	Housekeeping power has fallen below expected levels
7824	The BPSs for the cabinet are illegally configured, data Byte 3 = PDCA number
7825	BPS ID received from installed Bulk Power Supply was unknown
7827	Ambient Air Sensor Overtemp Warning
7828	Ambient Air Sensor Overtemp Warning
7829	Ambient Air Sensor Overtemp Warning
7834	I/O Fan Installed
7835	I/O Fan Removed
7836	I/O Fan Failed
7839	The PM firmware is being updated
7842	Cabinet Power System is in overload
7843	Cabinet Power Switch turned off
7845	Cabinet Shutdown-I nsufficient Blowers
7846	Cabinet Shutdown-I nsufficient I/O Fans
7847	I/O Expansion Utility Fan Installed
7848	I/O Expansion Utility Fan Removed
7849	I/O Expansion Utility Cabinet Fan Failed

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
7851	Clock Margined Externally
7852	Cabinet Clock Margined High
7853	Cabinet Clock Margined Normal
7855	Watchdog Timer Expired
7856	Invalid checksum from EEPROM
7858	System Backplane Power Board Fault
7859	System Backplane Fault Information
7861	HIOB Reset
7862	System Backplane Power Board removed
7863	Read of EEPROM failed
7864	Read of EEPROM failed
7865	Read of LPM Fault failed
7866	I/O Power Board over temperature
7867	I/O Power Board Fault
7870	I/O Power Board Fault Information
7871	Voltage Margin on I/O Power Board failed
7872	Failure to read data from a FRUID EEPROM
7873	Failure to read data from a SBCH FRUID EEPROM
7874	Failure to read data from a UGUY FRUID EEPROM
7875	Read EEPROM failed
7876	System Backplane Reset
7877	Read command on System Backplane I2C bus failed
7878	Write command on System Backplane I2C bus failed
7879	System Backplane Power Fault
7880	System Backplane voltage margin failed

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
7883	EEPROM read failed
7884	System Backplane LPM Fault Code access error
7891	Failure to write data to FRUID EEPROM
7892	CPU fan failed
7893	CPU fan failing
7894	CC chip fan failed
7895	CC chip fan failing
7902	PDH Controller firmware version is not supported with this version of MP FW
7903	Power fault on cell board
7904	Power is good on cell board
7906	Cell was reset
7909	Cell was issued a TOC
7938	The CPU Node reported a problem initializing its node in the device tree
7939	The ExecuteCommand function failed on a CPU
7940	A remote CPU is not prepared to receive a command
7948	An error was encountered when executing a PAL_PROC
7953	CPUs loaded in wrong order
7960	Uncorrectable ECC error in DIMM <HH> during self test
7962	Additional cell power converter fault status details in data field
7963	The XBC SBE and LPE errors were not cleared properly
7964	The CC to XBC link pattern test failed
7965	Error Reading a platform storage variable from the PDHC/MP
7966	An error was returned on a Platform Storage Write Command to the PDHC/MP
7973	The Sequencer was unable to find/use a needed tree node
7974	Firmware encountered an error in processing the partition variables

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
7975	A non-critical cell power fault has occurred
8009	CPUProcConfigValue in /options is not compatible with the current PAL/CPU
8010	Firmware cannot determine the Processor Dependent Features
8127	Data field contains data meant for firmware debug only
8128	The CLU has encountered an undefined case
8129	The Cell power has transitioned from an on to an off state
8130	An unknown Cell voltage margin has been detected
8131	The run-time verification of a programming assumption has failed
8132	An unknown error has been detected by the PDHC firmware
8133	An attempt to write to a device on the PDHCs I2C bus has failed
8134	An attempt to read from a device on the PDHCs I2C bus has failed
8135	An attempt to write to a device on the PDHCs SM bus has failed
8136	An attempt to read from a device on the PDHCs SM bus has failed
8137	Cell boot has been disabled due to a failure setting the frequency registers
8138	An error has occurred while updating System FW
8139	The PDHC firmware was reset for some unknown reason
8140	Cell boot has been disabled because setup of a CPU thermal sensor failed
8141	A CPU module has reported overtemp, so will be powered off in 1 minute
8142	Additional information about a CPU module overtemp event
8143	An error occurred while updating the PDHC firmware
8147	Boot is disabled because the cell type does not match the System FW ROM type
8149	The PDHC has waited an abnormally long time for PDH bus access
8151	The PDHC has waited an abnormally long time to obtain the PDH semaphore
8153	An error occurred while transmitting an IPMI message in the BMC2Hoperating systemT direction
8154	EFI unable to read initial debug level from the BMC

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
8156	A XBC port was unexpectedly found to not be land mined
8159	An invalid number of XBC ports were land mined in the system
8199	The run-time verification of a programming assumption has failed
8200	An unknown error has been detected by the PDHC firmware
8202	Data field contains data meant for firmware debug only
8206	A cabinet has been configured using an invalid cabinet number
8207	Cells trying to join a PD are at incompatible firmware revisions
8212	An attempt to write to a device on the PM I2C bus has failed
8214	An attempt to read from a device on the PM I2C bus has failed
8216	An error was encountered updating the cell information structure in ICM
8218	An error was encountered pointing the slave cell consoles to the diva
8219	An error was encountered trying to relocate a slave cells registry
8220	Complex Profile Group C CRC did not match the expected value
8226	Cell has joined OLA Rendezvous
8234	Reset the REO ropes during MCA error handling
8236	operating system MCA hand off to SAL
8237	Selection of partition monarch during a global MCA
8238	Failure to identify a core cell during Global MCA
8240	Internal firmware programming error in the PMI handler
8243	During a Cell On Line Add; inconsistent number of cells discovered
8269	CPUs of different maximum core frequencies are installed
8271	The RVL CC-Togo link initialization workaround (PS221) failed
8652	Internal firmware programming error
8690	Initialization of a PCI node in the firmware device tree failed
8691	An error was encountered while scanning the PCI bus

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
8692	An error was encountered initializing the PCI bridge
8693	An error was encountered initializing the PCI I/O map
8694	An error was encountered creating the PCI MMIO map
8709	There was an error initializing the SBA node
8710	There was an error discovering the SBA
8711	An error was encountered while resetting the SBA
8712	There was an error initializing the I/O link
8713	There is a problem initializing the REO cable
8714	The I/O chassis discovered was powered off
8715	There was an error initializing the LBA
8716	There was an error querying the LBA width
8717	There was an error with the LBA phase
8718	There was an error clearing the LBA
8719	There was an error with the LBA log
8720	There was an error discovering the LBA
8721	There was an error configuring the LBA
8722	There was an error scanning the PCI bus
8723	There was an error configuring PCI space through the LBA
8747	Firmware was unable to find a suitable block of main memory to relocate ROM
8756	The Options service received an NVRAM allocation error
8758	SAL errlog access time-out
8768	The echelon given in the data field is not fully populated
8781	A brownout has been detected on the AC input
8782	The main backplane is reporting the LPM status as good
8783	The main backplane is reporting the LPM status as off

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
8784	The main backplane is reporting the LPM status as fault
8785	The I/O backplane is reporting the LPM status as good
8786	The I/O backplane is reporting the LPM status as off
8787	The I/O backplane is reporting a LPM status as fault
8797	System firmware was unable to default the complex profile
8798	Firmware could not set Pal Proc features
8802	Firmware successfully promoted MCA to BINIT during Local MCA
8803	MCA caused by Blocking Time-out severity error
8806	Means that the error log space in the NVRAM has not been allocated
8807	The maximum number of logs for the event
8814	On Line Delete operation was started, but the firmware could not find a deletable cell
8815	The specified cell has been powered on
8816	The specified cell has been powered off
8817	The bulk power system is above its current capacity
8818	The bulk specified is warning of a potential thermal problem
8819	Malloc failed while trying to process and ERM
8821	DIMM at physical location in data field is not supported on this platform
8828	The OPTIONS component received a memory allocation error
8837	A DIMM or CPU has is deconfigured or failed testing
8838	The Cell Integration Policy is being reported
8839	The cell will not join the PD
8840	Context data from the IO errors engine. Needs to be post processed
8841	I/O Failed for this cell
8842	The error context in NVM was corrupt
8843	A rope went fatal from the SBA

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
8844	A PCI bus on the system went fatal
8845	One of the rope units in the SBA is dead
8855	Firmware encountered a problem trying to initialize
8857	This means that all the CPUs in the cell did not show up
8858	This means that all the cells did not rendezvous during the PD rendezvous
8859	The FW tree sanity check failed during the MCA error processing
8860	This means that the registry sanity check failed during MCA error handling
8861	This means that MCA occurred while operating system_MCA was performing error recovery
8864	One of the BT errors occurred that results in abandoning memory dump
8865	The firmware tree is not complete and there will be no PD rendezvous
8872	ACPI configuration mismatch across cells in the partition
8875	Invalid Real Time Clock Cleared
8877	Invalid data read from the processor information ROM of a CPU module
8882	Invalid parameter when setting CPU frequency ratios
8883	Option block in NVRAM has a checksum error
8906	An Error occurred trying to notify the MP of the attempted reset
8928	The IIP of the processor during an INIT event
8929	The IPSR value of the processor during an INIT event
8940	Cell has been disabled by the PDHC because no CPU modules were found
8941	Cell has been disabled by PDHC FW because the CPU modules are not compatible
8942	Cell has been disabled because of invalid data in a CPU module Scratch EEPROM
8954	The Cell Battery voltage level low warning
8979	The CPU is performance or functionally restricted
8980	This represents the MSR register number and data during MCA
8981	The RTC was found to be invalid and has been cleared

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
8982	Status indicates that the Late Self Tests did not actually run
9000	DRAM failure on DIMM XX, unallocate rank
9002	operating system_INIT returned to firmware/SAL
9019	System Clocks are not valid
9043	A reset for reconfiguration will be performed soon on the cell
9045	The Partition Profile specifies the wrong architecture type
9055	ACPI 1 0B hardware is not available
9379	CPU Dual Core Initialization Failed
9380	Second CPU in Pair has been disabled
9382	Virtualizing Dual Core Registers Failed
9383	Virtualizing Dual Core Interposer has failed
9386	CPU fan is reporting OK status
9388	Cell failed compatibility checks
9389	PDH space not available after release from reset
9390	MPON failed to release
9391	Dillon failed to reset
9392	DMD clock is not running
9393	CPU thermalert disabled
9394	All CPUs on the Cell are scheduled to be deconfigured
9404	There was an error gathering error logs for I/O
9413	Power is now available on AC input A0
9414	Power is now available on AC input A1
9415	Power is now available on AC input B0
9416	Power is now available on AC input B1
9417	Power has been removed from AC input A0

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
9418	Power has been removed from AC input A1
9419	Power has been removed from AC input B0
9420	Power has been removed from AC input B1
9421	A brownout of the AC line has been detected on input A0
9422	A brownout of the AC line has been detected on input A1
9423	A brownout of the AC line has been detected on input B0
9424	A brownout of the AC line has been detected on input B1
9440	FW will not hand off to the operating system_MCA handler for this MCA event
9443	Resetting the partition because slave processor not in expected state
9444	Resetting partition because a processor was not in the expected state
9448	The NVRAM block table maintained by System Firmware is corrupt
9458	Sherpa Diagnostic data
9483	Altimeter fault detected
9484	The link between the CC and SBA failed
9485	The SBA failed and the cell has no I/O
9486	The system firmware had an error with the structured error handling mechanism
9487	Not enough malloc resources for I/O structure error handling
9488	Unable to create entry for I/O structure error handling
9489	Unable to bind services for I/O structure exception handling
9490	Error initializing the I/O structure exception-handling services
9491	Error initializing structured I/O exception data structures
9492	The I/O exception context has an error
9493	Error creating the internal data and services for the SBA
9494	Error attaching the services to the SBA internal data structures
9495	Error initializing the internal SBA data and services

continued

Table B-1: Base Hardware Events ***continued***

Windows Event ID	Event Description
9496	The SBA type is unknown to the system firmware
9497	An embedded I/O device is missing
9502	Logging of concorde information of a remote cell
9650	The operating system_MCA handler checksum is valid and it passed
9651	The operating system_MCA handler checksum is not provided by the operating system
9652	Windows: Predictive Failure in Memory
9653	Windows: Server Agents Management data not accessible, locked property
9655	Operating system INIT CHECKSUM passed
9656	Operating system INIT CHECKSUM was skipped according to the settings by the operating system
9658	PCI slot exceeds power limit
9662	Logging of hondo errors during MCA error handling
9670	Could not disable the XIN link before a fabricless boot
9671	Floating Point Assist Exception trap syndrome data (fp0-fp3)
9675	The route is not traversable because fabric is disabled
9676	The route is not traversable because fabric is disabled
9677	The route is not traversable because fabric is disabled
9678	The clock ratio reported by manageability does not match the actual clock ratio
9681	Manual override of fatal stop boot condition
9682	Firmware unable to relocate VGA BIoperating system
9685	The Compatibility Matrix stored in NVRAM has a checksum error
9703	Cells in partition have different Complex C Extensible Header CRC
9704	Cell has different Partition Configuration Data CRC than core cell
9707	No possible core cells were found in the configured set
9727	PDC failed to read the processor architecture for another cell in the partition
9740	The buffer size is too small for the XBC error log

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
9741	System firmware was unable to clear an XBC error
9742	Firmware detected a possible Cabinet Power Time-out
9744	Error encountered while collecting PCI error logs
9745	Error encountered while collecting SBA error logs
9746	Fabric is unable to route the crossbar after multiple retry attempts
9749	Windows: Predictive Failure in Memory (Info)
9750	Windows: Predictive Failure in Memory (Warning)
9751	Windows: Predictive Failure in Memory (Critical)
9753	A rope parity error occurred
9754	PCI card inaccessible due to bus error
9755	PCI card inaccessible due to device error
9756	PCI card inaccessible (error status register)
9757	PCI card inaccessible (function ID)
9758	PCI card inaccessible (HW Path binary)
9759	PCI card inaccessible (ASCII hardware path bytes 0-7)
9760	PCI card inaccessible (ASCII hardware path bytes 8-15)
9761	PCI card inaccessible (ASCII hardware path bytes 16-23)
9762	PCI card inaccessible (ASCII hardware path bytes 24-31)
9763	PCI card inaccessible (ASCII hardware path bytes 32-39)
9764	PCI card inaccessible (ASCII hardware path bytes 40-47)
9765	PCI card inaccessible (ASCII hardware path bytes 48-55)
9766	PCI card inaccessible (ASCII hardware path bytes 56-63)
9767	PCI card inaccessible (ASCII hardware path bytes 64-71)
9768	Error reading BMC first boot token
9770	Context data from the I/O errors engine; must be post processed

continued

Table B-1: Base Hardware Events *continued*

Windows Event ID	Event Description
9773	The address that was used to clear the XBC error
9801	An error occurred while enabling hashing in the platform cache
9804	Icm command IcmQueuePartitionReleaseBib() is called and returned FAILURE
9832	Loss of cell connectivity in the partition
9849	Error building cell-level FW device tree
10061	Right ejector latch is open
10062	The optical emitters on the cell latch sensors are not functioning
10116	The NVRAM service was unable to satisfy an NVRAM allocation request
10132	The RTC not updating its internal time registers
10151	Both processors on MX2 module put into single issue mode
10153	Additional information about HPE Mitigation2 event
10154	One processor on the MX2 module exceeded the mitigation duty cycle threshold
10155	Additional information about the MX2 over mitigation event
10175	The Creator Product Name is invalid
10351	The maximum memory supported by this system has been exceeded
10361	A command to the memory buffer chip failed to complete
10625	The checksum in the memory area of NVM is bad
10626	Checksum calculation failed
10814	Significant numbers of corrected memory errors have been detected on the memory subsystem
10823	Cache errors detected on a processor
10824	Corrected errors detected in the cache portion of the memory for a processor module

Cluster Hardware Events

Table B-2 lists the cluster hardware events and their descriptions

Table B-2: Cluster Hardware Events

Windows Event ID	Event Description
1167	Cluster resource degraded
1168	Cluster resource failed
1169	Cluster network degraded
1170	Cluster network failed
1171	Cluster service degraded
1172	Cluster service failed

Network Interface Events

Table B-3 lists the network interface events and their descriptions

Table B-3: Network Interface Events

Windows Event ID	Event Description
1281	Network Interface failed
1283	NIC Teaming failed
1285	Network Interface failed
1287	NIC Teaming failed

Server Storage Events

Table B-4 lists the server storage events and their descriptions

Table B-4: Server Storage Events

Windows Event ID	Event Description
1061	Drive Array physical drive failed
1063	Drive Array spare drive failed
1064	Drive Array physical drive failed
1065	Drive Array Accelerator failed
1066	Drive Array Accelerator Bad Data
1067	Drive Array Accelerator Battery Failed
1075	Storage System Fan degraded
1076	Storage System Temperature failed
1077	Storage System Temperature degraded
1101	Storage System Side Panel degraded
1104	Storage System Fault Tolerant Power Supply degraded
1119	SCSI Tape Drive degraded
1120	SCSI Tape Drive degraded
1121	IDE Drive degraded
1145	External Array logical drive failed
1146	External Array physical drive failed
1147	External Array spare drive failed
1148	External Array Accelerator failed
1149	External Array Accelerator data failed
1150	External Array Accelerator battery failed
1151	External Array Controller failed
1152	Storage System Fan degraded
1153	Storage System Power Supply degraded
1154	Storage System Power Supply UPS degraded
1155	Storage System Temperature degraded
1061	Drive Array physical drive failed

continued

Table B-4: Server Storage Events ***continued***

Windows Event ID	Event Description
1164	Drive Array Controller Active
1165	Drive Array Controller Active
1173	Fibre Channel Tape Controller
1174	Fibre Channel Tape Library degraded
1175	Fibre Channel Tape Library door degraded
1176	Fibre Channel Tape Drive degraded
1177	Fibre Channel Tape Drive degraded
1178	Fibre Channel Tape Drive degraded
1179	External Array Controller degraded
1180	Drive Array tape library degraded
1181	Drive Array Tape Library Door Status Change
1182	Drive Array tape drive degraded
1183	Drive Array tape drive degraded
1184	Drive Array tape drive degraded
1185	Fibre Channel Controller degraded
1186	IDE ATA Disk degraded
1187	ATA RAID logical drive degraded
1188	Storage System Fan degraded
1189	Storage System Temperature degraded
1190	Storage System Power Supply degraded
1193	External tape drive degraded
1194	External tape drive degraded
1195	External tape drive degraded
1196	Storage System Recovery Server degraded
1197	External tape library degraded
1164	Drive Array Controller Active

continued

Table B-4: Server Storage Events *continued*

Windows Event ID	Event Description
1198	External tape library door degraded
1199	Drive Array Controller Active
1201	Drive Array spare drive degraded
1202	Drive Array physical drive degraded
1203	Drive Array physical drive degraded
1204	Drive Array Accelerator degraded
1205	Drive Array Accelerator data degraded
1206	Drive Array Accelerator Battery Failed
1207	Drive Array tape library degraded
1208	Drive Array Tape Library Door Status Change
1209	Drive Array tape drive degraded
1210	Drive Array tape drive degraded
1211	Drive Array tape drive degraded
1212	Storage System Fan degraded
1213	Storage System Temperature degraded
1214	Storage System Fault Tolerant Power Supply degraded
1215	Fibre Channel Controller degraded

C

HP IMP for MOM 2000 Data Tables

These tables are provided to assist with removing the HP IMP for MOM 2000 from a MOM 2005 environment, as described in the section, "Uninstalling the HP IMP for MOM 2000," in Chapter 2. The HP IMP must be removed before installing the HP Management Packs for ProLiant and Integrity servers.

Computer Groups

Table C-1 contains a list of all computer groups installed by the HP IMP for MOM 2000.

Table C-1: HP Management Pack Computer Groups

Computer Groups\HP Insight Management Agent Version 4.60
Computer Groups\HP Insight Management Agent Version 4.70
Computer Groups\HP Insight Management Agent Version 4.80
Computer Groups\HP Insight Management Agent Version 4.90
Computer Groups\HP Insight Management Agent Version 5.00
Computer Groups\HP Insight Management Agent Version 5.10
Computer Groups\HP Insight Management Agent Version 5.20
Computer Groups\HP Insight Management Agent Version 5.30
Computer Groups\HP Insight Management Agent Version 5.40
Computer Groups\HP Insight Management Agent Version 5.50
Computer Groups\HP Insight Management Agent Version 6.0
Computer Groups\HP Insight Management Agent Version 6.10
Computer Groups\HP Insight Management Agent Version 6.20
Computer Groups\HP Insight Management Agent Version 6.30
Computer Groups\HP Insight Management Agent Version 6.40
Computer Groups\HP Insight Management Agent Version 7.10
Computer Groups\HP Insight Management Agent Versions–All
Computer Groups\HP Insight Management Agent Versions newer than 6.40
Computer Groups\HP Insight Management Agent Versions newer than 7.10

continued

Table C-1: HP Management Pack Computer Groups ***continued***

Computer Groups\HP Insight Manager 7 Server
Computer Groups\HP Remote Insight Host System
Computer Groups\HP Systems Insight Manager System

Computer Attributes

Table C-2 contains a list of all computer attributes installed by the HP IMP for MOM 2000.

Table C-2: HP IMP Computer Attributes

Computer Attributes\HP Insight Management Agent Installed
Computer Attributes\HP Insight Management Agent Version Number
Computer Attributes\HP Insight Manager 7
Computer Attributes\HP Remote Insight
Computer Attributes\HP Systems Insight Manager

Rule Groups

Table C-3 lists all processing rules installed by the HP IMP for MOM 2000.

Table C-3: HP IMP Processing Rule Groups

Rule Groups\HP Insight Management Pack(Version 2.2)
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Manager 7
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Remote Lights-Out
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Remote Lights-Out\HP Integrated Lights-Out
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Remote Lights-Out\HP Remote Insight Lights-Out/II
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Systems Insight Manager
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10\Device errors
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10\Event Notifier
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10\Foundation Agents
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10\NIC Agents

continued

Table C-3: HP IMP Processing Rule Groups *continued*

Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10\Remote Monitor Service
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10\Server Agents
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10\Storage Agents
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10\Web Agent
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10
Rule Groups\HP Insight Management Pack(Version 2.2)\HP Insight Management Agents Versions 4.60-7.10

Scripts

Table C-4 lists all scripts installed by the HP IMP for MOM 2000.

Table C-4: HP IMP Scripts

Scripts\Compaq::CompaqURLScript
Scripts\HP::HPIM7URLScript

Providers

Table C-5 lists all providers installed by the HP IMP for MOM 2000.

Table C-5: HP IMP Providers

Providers\Compaq::Process-Handle Count-cpqnimgt-15-minutes
Providers\Compaq::Process-Handle Count-cpmgstor-15-minutes
Providers\Compaq::Process-Private Bytes-cpqnimgt-15-minutes
Providers\Compaq::Process-Private Bytes-cpmgstor-15-minutes

Views

Table C-6 lists all views installed by the HP IMP for MOM 2000.

Table C-6: HP IMP Views

HP Insight Management
HP Insight Management\HP Insight Management Agents
HP Insight Management\HP Insight Management Agents\Device Error Alerts
HP Insight Management\HP Insight Management Agents\Event Notifier Alerts
HP Insight Management\HP Insight Management Agents\Foundation Agent Alerts
HP Insight Management\HP Insight Management Agents\NIC Agents Alerts
HP Insight Management\HP Insight Management Agents\Remote Monitor Alerts
HP Insight Management\HP Insight Management Agents\Server Agents Alerts
HP Insight Management\HP Insight Management Agents\Storage Agents Alerts
HP Insight Management\HP Insight Management Agents\Web Agent Alerts
HP Insight Management\HP Insight Management Agents\Discovery
HP Insight Management\HP Insight Management Agents\Discovery\Insight Management Agent Versions
HP Insight Management\HP Insight Manager 7
HP Insight Management\HP Insight Manager 7\Insight Manager Agent 7 Alerts
HP Insight Management\HP Insight Manager 7\ Discovery
HP Insight Management\HP Insight Manager 7\Discovery\Insight Manager 7 Servers
HP Insight Management\HP Remote Lights-Out
HP Insight Management\HP Remote Lights-Out\Remote Lights-Out Alert
HP Insight Management\HP Remote Lights-Out\Discovery
HP Insight Management\HP Remote Lights-Out\Discovery\Remote Insights Host
HP Insight Management\HP Systems Insight Manager
HP Insight Management\HP Systems Insight Manager\HP Systems Insight Manager Alerts
HP Insight Management\HP Systems Insight Manager\Discovery
HP Insight Management\HP Systems Insight Manager\Discovery\HP System Insights Manager Servers

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